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THE

TRANSACTIONS

OF

THE LINNEAN SOCIETY

OF

LONDON.

VOLUME XXIX.

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GARDEN.

LONDON:

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SOLD AT THE SOCIETY'S APARTMENTS, BURLINGTON-HOUSE;

AND BY LONGMANS, GREEN, READER, AND DYER, PATERNOSTER-ROW.

M.DCCC.LXXV.

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PART I.—1872.

The Botany of the Speke and Grant Expedition, an Enumeration of the Plants collected during the Journey of the late Captain J. H. SPEKE *and* Captain (*now* Lieut.-Col.) J. A. GRANT *from Zanzibar to Egypt. The Determinations and Descriptions by* Professor OLIVER *and others connected with the Herbarium, Royal Gardens, Kew; with an Introductory Preface, Alphabetical List of Native Names, and Notes by* Colonel GRANT . . . . page 1

W. & A.K. Johnston, 74 Strand, London.

TRANSACTIONS

OF

THE LINNEAN SOCIETY.

6

I. *The Botany of the Speke and Grant Expedition, an Enumeration of the Plants collected during the Journey of the late* Captain J. H. SPEKE *and* Captain (*now* Lieut.-Col.) J. A. GRANT *from Zanzibar to Egypt. The Determinations and Descriptions by* Professor OLIVER *and others connected with the Herbarium, Royal Gardens, Kew; with an Introductory Preface, Alphabetical List of Native Names, and Notes by* Colonel GRANT.

Read December 7th, 1871.

INTRODUCTION.

IN the year 1860, when I was appointed to accompany Captain Speke to the sources of the Nile, it occurred to me that many a pleasant hour might be spent in collecting plants and seeds while traversing the country to be explored. I here confess that I did not then anticipate any botanical importance from such a collection. With this idea (more of pleasant occupation than of scientific result), before embarking at Plymouth, I purchased some drying-paper and a couple of books for notes, all for a few shillings. When Captain Speke saw this bundle of paper, he thought it far too cumbrous for such a journey, but he readily yielded to my wish to have it. He afterwards saw with me how the plants were appreciated when we took them to Kew upon our return. He lived to see them named and entered in his 'Discovery of the Source of the Nile.' Would that my poor friend had survived to see the present result!

With the above material, and having discarded a botanical case as lumber, I began collecting at the different ports we touched at between England and Zanzibar—namely, at Europa Island, Delagoa Bay, Johannah Island, and Rio Janeiro. When Captain Speke saw my plants accumulating, he further directed that the collection should be sent to Kew; this gave me a fresh impetus, and made me more diligent and anxious to obtain new and useful information.

The dried plants gathered up to Kazeh, in Central Africa, were entrusted to native porters to carry back to Zanzibar, and were sent thence to the Kew herbarium; those which were prepared after leaving Kazeh were carried by us across Africa to Egypt, and deposited at Kew.

The collection, therefore, is strictly African, embracing the countries to the west of Zanzibar and Nile-land; it is but a beginning, and must be taken as a very incomplete flora of the country.

We had many difficulties to contend with in such a journey. We had no means of carrying a large collection; our plants, with all my clothes, could only form a light load for one man. Wet weather, the unsuitableness of the season, crossing streams, and collecting during a march were all against us. Many plants were too large or succulent to attend to in a moving camp, and I often had the mortification of pitching away interesting species; but on such occasions I made notes and figures of them. The whole collection was once plundered, along with all our property, and in the hands of robbers for several days; but by patient submission and bribing the delinquents nearly all was recovered.

I will now proceed to give a short account of the countries through which we passed, from Zanzibar to Godokoro, 5° N. lat., trying to point out the capabilities of the country as a field for botany.

The first sixteen stages westward from the coast opposite to Zanzibar are level, with gentle undulations, and attain an elevation of 391 feet. The soil is a rich loam, frequently showing the channels of streams; it is covered with natural grass, of heights varying from 3 to 10 feet. The trees on this tract of alluvial soil are disappointing, none being full-grown except the *Borassus æthiopicus* and those influenced by streams: they are scorched every year by the burning down of the grass; and to this and the barking of many of them I attribute their stunted appearance all over our route. We occasionally camped upon the bank of the river Kingani, where water was abundant; but when away from it the water was dirty and disagreeable to use, and at times, from stagnation, bitter to the taste. The only hill was that of Kidoondah, a mass of rock, which together with some sandstone conglomerate were the sole indications we had of the rocks of the country. The following species were collected here:—*Vigna nilotica*; *Combretum constrictum*, Laws.; *Dissotis prostrata*, Benth.; *Momordica trifoliata*, Hook. f.

The 16th to the 37th stage, across the east coast range:—

The altitude of the pass we crossed upon this range is 5148 feet. Here there is a curious vegetation of trees and bushes; the east coast face, between the elevations of 5000 and 3000 feet, is dry, rocky, and unpromising, whereas on the west side of the mountains, where heavy dews fall, the foliage is dense and has a remarkably fresh, green appearance.

Between the heights of 3000 and 1000 feet (I speak now of the eastern face) we have something of a tropical vegetation. Palms are in dense clusters; the bamboo is in lofty clumps; creepers (*Loranthus*, sp. n.) cover the trees; bulbs are numerous; orchids are met with; lilies and reeds are abundant in lochs; the castor-oil plant, plantain, melons, &c.; are seen in the cultivations; and the lower hills, destitute of trees, are good pasturing-grounds for cattle. At M'dunhui, where there is a clear running stream, with bed of sand, we found the sarsaparilla vine abundant; and a few miles further west we came upon a beautiful valley, richly cultivated with rice and surrounded by low hills. Water of various kinds, from ditch-water to sweet water, iron-tasting and hot spring, was obtainable during every stage, except at the mountain pass, where we could not expect any.

The soils were also very different; but bright red clay and black loam prevailed. At two places on the hill-side we walked over beds of kunker, which is so much used in India for metalling roads.

In this hilly region we found, amongst other plants, *Mærua Grantii, Ochna macrocalyx, Tephrosia reptans, Cassia Grantii, Brachystegia tamarindoides*, Welw.

THE 37TH TO THE 52ND STAGE, ALT. 2498 TO 3465 FEET, COMPRISING THE DISTRICT OF UGOGO:—

Though of considerable altitude and adjoining the east coast range, this country has no valleys; it is filled with sand drifted by winds from the north and west; and the track may be said to be upon the tops of the mountains. The rocks which appear above the plain of sand are igneous and are remarkable for the forms they have assumed: some look like chimney-stacks; and others lie in huge masses one on the top of the other. The quartz which partly composes them is cube-shaped and the size of dice. In a dry desert like this there is no good water procurable; it sinks through the sand; the barrier of mountains to the east prevents its flow; it therefore stagnates, becomes brackish, and, percolating through the sand, renders other waters impure. The vegetation of such a country is poor; low-growing acacias, other scrubby thorny trees, euphorbias, and bush-jungle cover the plain. Such plants as *Vernonia*, sp., *Erigeron*, n. sp., are burnt by the people; and the ashes, with water, are converted into a bitter salt, which is one of the articles of commerce in the country.

THE 52ND TO THE 98TH STAGE, ALT. 3181 TO 4090 FEET, INCLUDING M'GUNDA M'KALI, UNYAMEZI, AND PART OF UZINZA:—

Here we have the same peculiarity of sand filling up a country to its mountain-tops, and this in addition:—Between the latitudes of 4° and 5° south the country has distinct parallel waves of sand, a mile or so apart, running northwards and disappearing in the forest. Though the subsoil is of sand, we have a fine undulating country, covered with forest of considerable value, and of such variety that in one hour's walk I have gathered twenty different species of plants. The rocks are igneous, and exhibit extraordinary dimensions in single water-worn masses; or the granite is in platforms upon the ground, forming reservoirs for water and dry places on which the natives thrash and winnow their grain.

Some of the hills are of red clay, and upon them the natural grass attains a height of 8 feet; while in the lower ground and in the dips of the forest the richer soils accumulate, and yield ample crops of grains, plantain, *Arachis hypogæa*, and various roots.

The following species were gathered in this region:—*Cleome hirta*; *Crotalaria nigricans*; *Smithia capitulifera*, Welw.; *Afzelia cuanzensis*, Welw.; *Lefeburia*, n. sp.; *Myrothamnus flabellifolia*, Welw.; *Hypoxis*, sp.; *Smilax Kraussiana*.

We never once experienced the want of water here, though there were no wells; the many outcropping rocks were generally an indication that water was not far away. A village was often by their side. Pools of water accumulated in the depressions of the country; or the granite, when presenting a large surface, formed natural cisterns for its collection.

One other remark I would make. I had seen quicksands in abundance in the channels

of rivers in Northern India, and one dangerous one at Simon's Bay, Cape of Good Hope; but this was the only part of our route where such a thing was observed. Also in this section of the country (Uyombeh) a marvellous seed-vessel was brought to me, so large (yet so light) I could not carry it; for ten years it defied me to get it named: at Kew the gentlemen were sceptical about it; at last I applied to Dr. Welwitsch, who produced a similar plant, and pronounced mine to be "probably an Amaryllidaceous plant, between *Buphane* and *Brunsvigia*."

The 98th to the 108th stage. The Usui district, alt. 3447 to 4204 feet:—

As this is different to any thing we had yet come across, it deserves a short paragraph to itself. Here we find that the strata (sandstone) of the country have been thrown up to an almost perpendicular wall or dyke, and appear to be 500 feet above the valleys. Behind these ridges, to the west, the country has been convulsed by volcanoes, and presents a field of mounds with igneous and quartz rocks upon their slopes. We have no longer sand here, no longer any brackish or impure water; the latter is sparkling like crystal, it falls in cascades, and refreshes the traveller by its coolness. Forest there is none; but some rare plants were gathered, such as the *Clematis chrysocarpa*, *Albizzia brachycalyx*, Oliv., *Viscum*, sp., *Vitis Grantii*, *Acanthus arboreus*, *Sesamum*, n. sp.; and the valleys had a sufficient supply of plantain, roots, grains, and cattle for the consumption of the inhabitants.

The 108th to the 117th stage. The Karagweh district, alt. 4661 feet:—

This was the highest inhabited portion of our journey, and is a bleak, desolate region of steep hills, without firewood or shade, and having but a scant supply of water. The vegetation of its heights is of coarse grass, not fit for cattle (*Anthisteria imberbis*, Retz.); and brushwood shades the ravines; their slopes are strewed with fragments of hard sandstone and igneous rocks. The valleys have lakes, rivers, and rivulets, which may be called the headwaters of the river Nile; on their borders we found plots of cultivation, consisting of plantain, *Sorghum*, sweet-potato, beans, peas, *Sesamum*, tobacco, chillies, bengan, tomato, the castor-oil plant, &c.; and there is a splendid flora in the valleys.

Some of the newer plants were:—*Crotalaria ononoides*, Benth.; *Tephrosia æquilata*, Baker; *Tephrosia eriosemoides*, Oliv.; *Cassia falcinella*, Oliv.; *Dissotis canescens*, Hook. f.; *Dicoma*, n. sp.

I would briefly mention a peculiar formation of rock met with here. It was a square *pillar* of hard sandstone, 6 to 7 inches square, with four distinct bands of colour (purple-red, grey, flint-grey, and purple-red) in its transverse section. I found this same sedimentary rock in a softer and chalky state, streaked red and white. Other sandstone had the marks of small oblong and square substances having been deposited in them. This square form was quite new to us, though we had met with pebbles in sandstone while passing through the district of Usui.

The 117th to the 150th stage. The north-western shore of the Victoria Nyanza:—

This extends from the river Kitangule, the largest feeder of the Victoria Nyanza, to the Uganda frontier, at 1° N. lat., and embraces the country for one degree upon either side of the equator. It has an aspect different from any thing yet met with. The whole tract bears the strongest evidence that it once was a plateau of 4000 feet high. The

action of constant moisture at the equator has washed away all the softer parts to a depth of 500 feet; and what now remains consists of ridges of rock and clay mounds, all of one elevation, and pointing generally to the vast basin of the Victoria Nyanza. The sediment thus excavated from a territory of 3000 square miles helps to silt up the west side of the lake and to form islands there. These ridges and mounds of rock and clay are of a uniform height; their flat tops are covered with a woody reed, 10 feet high (*Pennisetum Benthami*); their sides are boulders in red clay, a few trees appearing amongst the rocks: lower down, field upon field of plantain and of grains mark the dwellings of the people; and at the lowest depths we have the vilest bogs, concealed by the beautiful papyrus, magnificent trees, and creepers.

Travelling through such a track of alternate swamp and hill presents difficulties to the collector; every mile there is mud of the most tenacious kind; but I longed for the chance of collecting the strange plants which everywhere surrounded us. It will be seen that this country of Uganda, though remarkably fertile in the production of the plantain, is not adapted for the cultivation of crops of grain; still, upon the drier portions of it, we had clumps of bushes, the *Euphorbia antiquorum*, scrubs of acacias, coffee, sugar-cane, chillies, sweet-potato, ground-nut, *Sesamum*, with various grains and pulses; and in this region we found *Tephrosia polysperma*, Baker, and *Amomum*, sp.

THE 150TH TO THE 170TH STAGE. UNYORO PROPER, ALT. 2800 FEET:—

This country is 600 feet lower than the last; the undulations are gentle, and the aspect has settled down to that of a plain. The subsoil, for the most part, is of a cold, dull black colour, hard, dry, and knotty, containing 40 to 70 per cent. of clay; it is strictly alluvial, and has great capabilities for wheat or such like cereals. Upon it the rains of November lie to a depth of 2 or 3 inches; the whole is covered with 6-feet-high grass (*Cymbopogon finitimus*, Hochst.); trees are thinly scattered; the swamps have *Mimosa asperata*, *Hibiscus*, *Hygrophila*, *Brillantaisia*, *Biophytum*, *Acrocephalus*, *Blumea*, *Portulaca*, *Chenopodium*, *Bryonia*, *Ottelia*, *Nymphæa*, *Typha*, *Æschynomene*; and four species of *Vitis*, with *Rhynchosia Grantii*, Baker, were found here.

The Nile bounds its N.E. frontier, and during the floods in November, when the river is a thousand yards wide, it carries land-slips away in its course. These floating islands of rank vegetation melt away and are broken up by the rocks and cataracts in the channel of the river, above the Karuma Falls.

THE 170TH TO THE 192ND STAGE. THE RIGHT BANK OF THE NILE FROM KARUMA FALLS TO GONDOKORO, ALT. 2800 TO 1500 FEET:—

These twenty-two stages (200 miles) afforded the richest flora of our whole route; one fourth of the collection was made there, between the months of November and February, when flowers were in their bloom. The Nile has there its grandest course, taking it from its source to its mouth. Nearly all the distance it runs over rock, plunging or foaming over cataracts till it falls into the Albert Nyanza, whence it flows along a reach of several miles, with "Jubl Kookoo," a mountain-range of escarped rock, upon its left bank. Besides possessing the glorious Nile, this district has many clear-bottomed and rocky rivulets, flowing through woods and circling through granite-capped hills.

The variety of soil and its general richness gave us a variety of flora, including the bamboo, tamarind, *Musa ensete*, *Canavalia*, a strange *Amomum*, *Ficus*, *Zizyphus*, *Ste-*

ganotænia, *Brehmia*, *Ximenia terminalia*, *Bassia*, *Lophira*, *Sclerocarya*, *Hexalobus*, *Carissa*, *Sarcocephalus*, *Landolphia*, *Dombeya*, *Boswellia*, *Balanites*, *Cadaba*, *Trichilia*, *Cratæva*, *Stereospermum*, *Celtis*, *Khaya*, *Boscia salicifolia*, Oliv., *Cochlospermum niloticum*, *Polygala acicularis*, Oliv., *Harrisonia abyssinica*, *Crotalaria Grantii*, Baker, *Tephrosia rigida*, Baker, *Sterculia*, *Albizzia*, *Detarium*, *Gardenia*, *Strychnos*, *Hyphæne*, *Acacia*.

We found that plantain and the cultivation of the *Manihot utilissima* had entirely ceased; but grains and roots, already mentioned, took their places.

In concluding these remarks on the aspect of the country, I would beg to mention to future explorers in botany, that there is a vast new field for their labours under the equator and to the southward, to which, in consequence of ill-health and unsuitableness of the season for collecting, I could pay no attention.

From Gondokoro, at 5° N. lat., to Cairo, the Nile is very uninteresting when compared with its course further up. There was a sameness in the vegetation, in the flatness of the country, and in the muddy, sluggish stream, that made our journey by boat tame and monotonous. There was one exception to this, at lat. 21½° N., where we crossed the desert, and found a country upheaved into ridges and crags of slate; and there I saw a new species of palm tree. The fruit which I gathered, unfortunately, did not propagate at Kew; but a description of the species will be found in its proper place.

In the whole course of the journey I could not fail to be deeply interested in every plant I met with; for all were new to me. All the roots, herbs, and grains eaten in periods of famine by the people, all the medicinal plants used by them, with the woods employed in economic purposes, all were of interest. I have watched the natives in the forest searching for roots to satisfy their hunger, the starving poor gathering the seeds of natural grass as food, the poor women carrying home loads of rank-looking mushrooms for their families, the *Veltheimia* of the swamp being boiled as a vegetable, the medicine-men waving a plant in the air to charm away the evil eye, the making of wine from the plantain, the making of ropes from the palm, the camel eating the star-thistle* of the desert, and the leaf † which the sand-bee converts into her cells. Having witnessed this without any suspicion or rude remark on the part of the natives, I feel it is but due to them to mention the fact, and to add that they rendered me every assistance in their power by giving me the names and uses of any plant they knew, never interfering with me in the collecting or the examination of them.

It was my custom to attach a numbered ticket or a label to every dried specimen, the number corresponding with notes made upon the plant collected; and when I had the satisfaction of seeing my plants classified at Kew, this method, which gave little trouble, was of great service; and I cannot recommend it too strongly.

In ascertaining the uses of plants I was assisted by several of our African followers, who travelled with us from Zanzibar to Cairo. One of these men (Manua, a native of Unyamezi) had an extraordinary knowledge of plants and trees, discriminating between those he knew and those that he had not previously met with. I am sorry to say that Manua is since dead.

* *Centaurea calcitrapa*, L.

† *Stereospermum*, sp.

To M'nanagee, the brother of King Rumanika, of Karagweh, and other members of this family I am indebted for much information. The natives are more intelligent about plants than people give them credit for: they have names for every one of their more common trees; and I believe that all those names have a signification applicable to the plant. As I made a point of gaining this information for the benefit of traders or travellers, I hope it may be considered of sufficient value to be inserted in the Linnean Transactions. Since my return from Africa I have sent copies to Dr. Krapf, a great Kisuahili scholar, Dr. Kirk, at Zanzibar, to General Rigby and others, with the view of obtaining the derivations of the words; but in a language where there are so many different dialects, and these so little known, small results have followed: what they are, however, I give at the end of these notes.

I come now to the pleasant duty of offering my thanks to Dr. Hooker for having allowed the gentlemen at the Kew herbarium to name, classify, and describe my plants, and to the President and the Council of the Linnean Society for permitting the collection to be published in their Transactions. I am fully conscious that without such aid as those gentlemen kindly afforded, collectors like myself would lose their labour, and be discouraged from further research.

In 1863, when Captain Speke and I made this collection over to the Royal-Garden herbarium, the late Sir William Hooker permitted Dr. J. Thomson to name it, with a view to the list appearing in Speke's 'Journal of the Discovery of the Source of the Nile.' Five years later the first volume of the 'Tropical Flora of Africa,' by Professor Oliver, appeared; and a copy was forwarded to me through the courtesy of the Department of Public Works. The incident of receiving this work excited a strong desire to have a special volume prepared of the "Fauna and Flora collected by the Speke and Grant Expedition;" hence I communicated with my friend Dr. Thomson; and he was the first to suggest that the Linnean Society might publish the Flora in their Transactions. This was far beyond my expectation, but was readily agreed to by the Council upon my undertaking to have 100 of the newest or most interesting of the species illustrated.

The plates which have thus been lithographed are either new species or such as had never been figured abroad or at home, the object being to present what was of the greatest interest to the botanist. I trust that the selection will meet with the approval of the Members of the Linnean Society; for I have had the good fortune to have the drawings on stone made by Mr. W. H. Fitch, from the actual specimens, and he stands alone as the able artist of his department. The descriptive part of the first portion (to the end of Leguminosæ) has been entirely worked up by Professor Oliver; the succeeding portions will be undertaken by him, by Mr. Bentham, and others, who will respectively affix their initials to their contributions. To most of the species I have added a few memoranda from my note-book, signed with my own initials.

A map, illustrating our route, appears in the frontispiece.

J. A. Grant.

16th November, 1871.

7 Park Square West, London, N.W.

ALPHABETICAL LIST OF NATIVE NAMES FOR AFRICAN PLANTS.

Each name has its dialect denoted thus ("Kis." would signify Kisuahili, or coast language) :—

Kar. implies the language of Karagweh.			
Kin.	"	"	Unyamezi and Central Africa.
Kis.	"	"	the Suahili, or coast.
Kig.	"	"	Uganda.
Keeao	"	"	Heeao.
Uny.	"	"	Unyoro.

Arāk (Egypt), m'swakee (Kis.), *Salvadora persica.* Bush plentiful on Nile bank at 12° N. lat. Tooth-brushes (m'swakee) are made of its branches.

Bameea m'weetoh (Kis.), *Hibiscus esculentus*: meea=100, m'weetoh=wild, or hundred-seeded; m'wito =the jungle or wild; bameea-ya-mwito=the wild bameea (Kirk).

Baraz (Kis.), *Cajanus indicus*, DC.: barazi, balazi, or baazi=a hard pea, &c.; m'baazi=the tree (Steere), kind of bean (Kirk); m'basi=Krapf's cereals and vegetables.

Bootoo (Madi), *Detarium*, sp.: at 3° N. lat. This name is given to a stone-fruit tree unknown to our followers. Specimen of stone in seed-house, Kew.

Booyoo (Kis.), *Adansonia digitata*, L.: buyu=the fruit, pl. mabuyu; m'buyu=the tree, pl. mibuyu (Steere); the fruit of the m'buiu (Kirk). Its gourds and those of *Lagenaria vulgaris* are used for drawing water.

Bozeea (Kin.), *Sphæranthus suaveolens*? The Central Africans wash their bodies with a mash of this plant mixed with water to check ague.

Cateendeer'ee (Kin.), *Acacia*, sp.: 3° N. lat.

Ceemampeea (Kin.), not determined. Tree bearing excellent plums with one to four stones. *Eugenia*?

Chenjha (Kis.), *Chrysophyllum*? A sweet plum, the size of a greengage, but with from one to three stones. Kirk says this name is given to the mandarin orange; so does Steere and others.

Cheroko (Kis.), *Phaseolus mungo*: peendeh of Uny. and Kig. A most excellent nutritious grain sown in ridges.

Chongōma (Keeao), *Ficus*, sp. Own brother to the m'tawa fig, which see.

Chongweh (Kis.), *Aloë*, sp. Grows like a pine-apple; leaves fleshy, toothed at their edges and spotted, smell disagreeably; they are soaked in lime-juice and made into pickles by coast people.

Dambazzee (Keeao), *Phaseolus mungo*? and koondeh (Kis.).

Deleb (Egypt), *Borassus æthiopicus.*

Doom (Egypt), *Hyphene thebaica.*

Doom'o (—), *Cannabis sativa.* Called doom'o after it has flowered, when it intoxicates those who smoke its leaves.

Embe (Kis.), the *Mango*: muembe=mango-tree (Krapf), mango (Kirk). Plentiful on the islands of Zanzibar and Pemba, but not observed on our route.

Fenessee (—), the jack-fruit, seen only at Zanzibar: finessi la kizungu=the European jack-fruit (Steere); m'fenessi=bread-tree (Krapf); finessi ya kizungu=the Durian fruit, or the white man's jack-fruit (Kirk).

Fiwi=beans (Krapf).

Gartoom (Egypt), *Carthamus tinctorius.* The town of Khartoom, at the junction of the Blue and White Niles, is probably called after this plant, as we first saw it cultivated here for its oil.

Ghaff (Muscat), *Acacia albida.*

Gnongomæro (Kis.), not determined. A scrub of a tree, the fruit of which is applied, with water, to burns, by the Waheeao.

Gobeezitto (Kig.). The houses of the king of Uganda are built of its very tall, straight spars.

Gonjewah (—), an indifferent or sickly-looking species of Plantain. Gonjwa=sick.

Good'æ (—). Tree with straight trunk, and yellow, slippery bark; the trunk twists with the sun. Also called m'paramiss (Kis.).

Goongootai (Kis.), *Acacia*, sp. Its pods curl into a ball, and then look like the dung of a goat.

Gurrut (Egypt), *Acacia*, sp. Lofty tree, with pleasant-smelling roots.

Gweenguceezoo (Kis.), *Dolichos Lablab.*

Harāz (Egypt), *Acacia albida.* Upon the Blue Nile there is a village called Aboo Harāz, no doubt after this fine shady tree.

Hundhul (Egypt), *Citrullus colocynthus.* A kind of tar is extracted from its fruit, and used for smearing leather sacks which carry water.

Joogoo-maweh (—), *Voandzeia subterranea*: joogoo=a nut; maweh=stone. A hard round ground-nut (Steere); ndu mawe=cereal (Krapf); ditto (Kirk).

Kalembo (Kin.), *Zizyphus jujuba?* In Abyssinia its fruit is made into a substance like dry cheese.

Kana (Kin.), *Cadaba farinosa.* Grows upon white-ant hillocks. The Wanyamezi eat its leaves boiled. The pods are silvery grey, and the leaves are of a dull leaden hue.

Kania (—), the solid white fat, like sheea-butter, obtained from an unknown tree (Kirk).

Kaooma (—), Calumba root (Krapf): kaomwa=Calumba root (Steere).

Karanga (Kis.), *Arachis hypogæa.* This ground-nut when green is pleasant boiled; and when ripe it is excellent roasted and eaten with salt.

Karowamba (Kin.), *Dracæna?* Tall trunk, with soft ashy-grey scaling stem; leaves 4 feet long, and 4 inches broad.

Katatee (Ugogo), *Balsamodendron africanum.* Africans boil its gum, mix it with butter, and then smear their bodies, by way of scent and for warmth.

Katoolool'a (Kin.), not determined. Bulbous plant 6 to 8 inches high, white leaves. The liquid from the boiled root acts as a purgative. Lulu=a pearl (Steere).

Keekalla (Kin.), *Fuirena umbellata?* The natives at 3° N. lat. extract salt from it.

Keelalla (Kis.).

Keelōlo (Kin.), *Kyllingia macrocephala?* Plant having a sweet perfume. The women of Unyamezi pound its purple roots, and rub their bodies with the powder as a scent.

Keeng'a (Kin.), *Dombeya multiflora.* Blossoms in January; a tough wood, making excellent bows.

Keepoong'ooree (Kis.), not determined. Forest tree, with shining triplet leaves. In Heeao a caterpillar, which is eaten, feeds upon its young leaves.

Keeseembeetee (Kis.), *Combretum?* Forest tree; gives out great heat in burning. Its leaves are applied to broken limbs in Heeao.

Keesongweh (Kin.), *Aloë*, sp. The coast people soak its leaves in the juice of the lime, and make a pickle of them.

Keetannee (Kis.), not determined. A strong white fibre for ropes. Kitani (Arabic)=flax (Steere).

Keeteembee (Kis.), *Bauhinia Thonningii*, Schum. Its bark is used in making ropes; the leaves are applied to sores.

Kimanga, Krapf's cereals and vegetables. A small kind of grain (Steere).

King-geezee (Keeao), *Protea?* Boys make wreaths of its large white waterlily-like flowers. In famines the leaves are eaten boiled. Black ants are attracted to its leaves, and eat them. Where this tree is found in abundance, copal gum will not be far away. (Native information.)

Kiquata, *Acacia vera* (Krapf).

Kolōla (Kin.), *Gardenia lutea*: called also millæma thembo=elephant-fence. A decoction of its root

mixed with the flour of *Andropogon sorghum* is drunk as a remedy for blood in the bladder. First-rate fence against animals.

Kong'golo (Kin.), *Æschynomene Schimperi*? Its light wood is made into shields by the Waganda; used also for door-bolts, floats, and load-levers.

Koonde (Kis.), *Vigna luteola*: koondi (Krapf), dambazzee (Keeao). A grain eaten when dead ripe; its leaves are dried and eaten as a vegetable.

Kowangwee (Kin.), *Capparis tomentosa*, Reich. In famines its leaves are eaten boiled.

Kweme, Krapf's oleaginous plants.

Leewozeeo (Keeao), *Dracæna*? A branch of it is used as a charm to discover lost or stolen goods. Ku lewa=to become drunk (Steere).

Lombo (Keeao), *Colocasia antiquorum*=myoogwah (Kis.). A vegetable.

Loonæmæra (Kis.), not determined. A dark wood used in building; fruit not edible.

Loononya (Kin.), *Hibiscus sabdariffa*. Yields an elastic silky fibre for rope. Reechopwa (Keeao).

Loo-oonjoo (Kis.), not determined. A hard wood made into measures for gunpowder; fruit not edible.

Looquajoo (Kis.), *Tamarindus indica*: ukwaju (Steere), m'kwadsho (Krapf), m'kwadju=the tamarind-tree (Kirk).

Lub-ach (Egypt), *Acacia Lebbek*. Planted by houses at Khartoom.

Maboga (Kis.), the general name given to all vegetables.

Machoongwa (Kis.), oranges.

Mælee (Madi), *Afzelia cuanzensis*. 14 feet circ. of trunk, branched at 12 feet from the ground, 50 feet high: seeds worm-eaten.

Mafoot'a (Kis.), any oil or grease; thus, mafuta tanga (Krapf); mafoot'a ya m'nazi=cocoanut oil (Kirk): but it generally means *Sesamum indicum*, an oil-producing plant.

Mafwa (Kig.), not determined. Large tree, fit for making canoes.

Magadee (Keeao), *Cyperus alopecuroides*. Used as thatch. An inferior salt is prepared from its ashes. Magādee=snuff.

Maharageh (Kar.), *Lablab vulgaris*?

Maheendee (Kis.), *Zea mays*: mahindi=Indian corn (Krapf & Steere). Grown in ridges.

Makōla (Kin.), *Afzelia Petersiana*? Trunk 9 feet in circumference.

Makōweh (Kig.), *Dioscorea bulbifera*: veetoongoolla (Keeao), mātoo (Kin.).

Malenga (Kis.), *Zygia*, sp. A bushy tree with scarlet flowers, near *Zygia fastigiata*.

Mamoongoonya (Kis.), *Cucurbitaceæ*. The fruit is the size of a child's head, either round or elongated, and is eaten boiled. Mamunye=vegetable marrow (Steere), is no doubt the same.

Mandano, one of Krapf's cereals and vegetables.

Mangwah (Kis.), not determined. A brushwood used for striking fire. Mangoo (Keeao).

Maoonga or maoonga-oonga (Kin.). Its bark, pounded and tasting bitter, is taken in a powder by the Sultan of Ukuni in his beer. It is of a pale-brown colour, and is brought from the hills. Oonga =flour or powder.

Maoongee-oongee (Kis.), *Nymphæa stellata*. The flowers and roots are edible (Heeao). Yungi-yungi= blue water-lily (Steere).

Maoongo (Kis.), not determined. Tree spiral, fruit edible, trunk small. Unyoro.

Mapeendee (Kin.), the general term given to all arrows.

Matætæ (Kis.), *Arundo phragmites*. Flutes are made of it. This is a general name for reeds. From 4° 55′ N. lat. to the Bahr-el-Gazelle, at 9° N. lat., the banks of the Nile are one mass of them.

Matagarar'eh (Kis.?), *Cucurbita maxima*. Cultivated in Central Africa.

Matango (Kis.), *Cucumis sativa*?: madango (Krapf). Cultivated by the Arabs at Kazeh; they got the seeds from Maroongoo, a place at the south end of Lake Tanganyika. May have been imported there by the Portuguese.

Matongo (Kis.), ? *Strychnos.* Orange-sized edible fruit. M'gooloongooloo (Kis.).

Matoo (Kin.), *Dioscorea,* sp. A three-cornered fruit, eaten as a vegetable boiled.

Matoongool'a (Kis.), *Amomum,* sp. Fruit scarlet; grows underground. It is very refreshing to the taste. The Waganda wear the fruit as a wreath or a necklace. *See* M'toondoo (?).

Meeafwengeh (Kin.), probably *Meliaceæ,* resembling *Celastrus.* A fleshy fruit with one or more stones.

Mee-enzeh (Kin.), m'noozameenzeh (Kin.), ? *Ficus.* Its bark is used as rope; also it is converted into second-rate bark-cloths.

Mee-enzerrah (Kin.), *Lophira alata.* This is one of the handsomest trees in Africa as to foliage and flowering. Its bark is made into cloths. M'toto (Keeao).

Meelalla (Kin.), *Borassus æthiopicus,* the "deleb" of Egypt. The root is boiled and eaten in famines; the fronds are made into drinking-cups, and excellent matting, strong and white.

Meelangameea (Kin.), not determined: meela=wood, gameea=a camel. Camels eat its leaves. This is a climber, which separates from its root and lives upon the copal or other tree. Copal gum forms in lumps of considerable size at its roots. It was observed by our party in Uzaramo. (Native information.) N'gamia=a camel and a long parasitical plant (Steere).

Meelangarree (Kin.), *Euphorbia antiquorum.* Its milk is used as a glue when cloth is being weaved. The "quol-quol" of Abyssinia?

Meelee (Kin.), ? *Ficus*: m'voooh (Kis.). Lofty tree; trunk 11 feet in circumference.

Meeleendee-meela (Kis.), not determined. A nasty outspreading half-tree; fruit apple-size and inferior. The wood is made into drum-sticks and harmonicons.

Meelomba, meeroomba (Kis. & Kin.), m'loombo, *Ficus.* One of the bark-cloth trees.

Meeloolo.

Meeloong-oo (Kin.), not determined. Its wood is made into bows.

Meeombo (Kin.), *Brachystegia spicæformis*: m'jombo (Kis.). Fifty feet high, 9 feet circ., and tall trunk; yields a first class bark-cloth. Its bark is made into boats, cloths, rope, roofing, baskets, corn-bins, kilts for wear, match or tinder; and its wood is large and useful. The honey from its flowers is considered of the purest and whitest quality.

Meeonga pembeh (—), *Steganotænia,* sp.: pembeh=a horn, an instrument of the enchanter. With a branch of it in the hand, a man may rob a house without detection, by placing the branch over the doorway of the house; or if he kills a goat at a cross road, and has a branch of it by him, he will find that all are asleep where he goes to plunder cattle or other property. Were not all Lumerezies's cows stolen by a man carrying a branch of this tree, and none of them ever recovered? It is a bad wood. (Native information.)

Meepamb'a (Kis.), *Gossypium barbadense.* This is the plural for cotton. It is very little cultivated in Central Africa, merely a bush or two by villages, sufficient to yield cotton for stringing beads and making kilts. Mbamba=cotton-plant (Krapf).

Meepampa (Kin.), *Bassia,* sp., ? *B. Parkii.* The natives of Ugani and of Madi chip away its bark; a milk exudes freely, and this forms a gum.

Meesōlo (Kin.), ? *Vitex.* Tree with immense, tall, straight trunk, 12 to 15 feet in circ., which is made into canoes for the King of Uganda upon the equator. Its fruit has a stone like that of the *Vitex,* and is worn strung round the leg to give strength. Props to houses are also made of its mast-like wood. Known to Manua, who had seen it in a similar country at Mambweh, S. of Tanganyika Lake.

Meesoo (Kin.), *Chionanthus*?, sp. Flowers are sweetly scented.

Meesoofee (Kis.), *Eriodendron anfractuosum*: ? m'sufu=fruit-tree (Krapf). Observed in flower in October, at 7° S., and again at 2° N. lat.

Meetoobba (Kig.), *Ficus,* sp. One of the bark-cloth trees of Uganda.

Meetwai (Kin.), not determined, and m'cæwæ (Kis.). Small tree, with thorns upon its trunk. Its seed-vessel is orange-sized, showing ten sections: this vessel, when emptied of its pulp, is filled with gladiolus-seeds and tied round the ankles by dancers.

Meezanza (Kin.), *Hyphæne*, sp. Found in the desert at 21° N. lat. Unknown to all our followers except "Manua," who had seen it at Mambweh, near Feepa, to the S.E. of Lake Tanganyika. Its seeds failed to propagate at Kew.

Meezaza (Kin.), not determined. Tree.

Milægæa (Kin.), *Kigelia pinnata*. Its leaves, with sand, polish spear-handles; the seeds from its gourd are eaten roasted in famines. M'sankwa (Kin.).

Milenda (Kis.), *Urena lobata*. Its bark is made into rope.

Millæandægæ (Kis.), dægæ=a bird, *Ficus*, sp. Twelve feet in circumference. Its figs are the richest tasted in Africa.

Millæmathembo (Kin.), thembo=elephant, *Gardenia lutea*. Its branches are remarkably tough and thorny; even elephants will not attempt to touch them.

Mininga (Kin.), Leguminose tree?: m'nenga, m'toombat'ee (Kis.). Bark full of sticky blood-red juice; wood made into drums, spurtles, &c. The fruit mashed is a remedy for coughs.

Mis-ai (Uny.) and missessai (Uny.), not determined. A blackish-red heavy wood, made into stools. Trunk four feet in circumference; compound sensitive leaves; gum. Misayi or m'saji=a teak (Steere).

Mismari, Krapf's trees.

Missala (Kig.), ? *Ficus*. This yields bark which is made into cloths of a light salmon-colour for the King of Uganda.

Misseepatæka (Kis.), not determined. Bushy tree; leaves in whorls of threes; excellent firewood.

Misseerānga (Kin.), not determined, ? *Ficus*. The bark of this tree is considered of the best quality for making bark-cloths.

Mizzee-zeema (—), not determined. The solid log canoe, forty-five feet long, by which we ferried the river Kitangule, was made of this wood.

M'koko (Kis.), a mangrove tree (Steere): koka=a general term for brushwood (Steere).

Mohambo (Kin.), *Argyreia*, sp. Seen growing by the hut of a sportsman in Unyoro, where it is considered a lucky plant.

Mohamma (Kin.), *Hyphæne thebaica*: the "doom" of Egypt. The rope sold at Berber and baskets are made with its fronds. The fruit can be eaten, and tastes of a gingerbread nut. Beams and posts are made of the branched trunk. M'voomo (Kis.).

Mohogo (Kis.), *Manihot utilissima*: muhogo=cassada (Krapf). It is grown from cuttings placed 40 inches apart; attains a height of 10 feet.

Mokōko (Ug.), ? *Ficus*, sp. A tree with gigantic boughs, with single large leaves; not in fruit in May; no air-roots.

Molerriwæga (Kin.) and mololo (Kin.), ? *Acacia*. Useless tree, with compound leaves.

Molōlo (Kin.), *Stereospermum*, sp. A tree overhanging water; the trunk 3 feet in circumference. A yellow and green sand-bee makes its cocoons with the tender leaves of this tree.

Mooa (Kin.), *Jasminum*, sp.; also a tree, "mooa" (Kin.), 12 feet in circumference of trunk. The whitest and purest honey is obtained from it. Women drink an infusion of its roots when their milk disagrees with their children. Wood useless, except that it will keep alight all night.

Moobwæra (Kar.), not determined. Tree. The people of Karagweh use this, with salt, as a remedy for tapeworm. They also use the roots of a hardy thorny shrub, near *Balsamodendron*, in decoction, for this disease.

Moohoosee (Kin.), *Acacia*, sp. Lofty tree. The roots have a pleasant odour.

Moongootwa (Keeao), *Kigelia pinnata*.

Moo-oomboo (Kin.), *Odina Schimperi.* Wood heavy; fruit edible; roots are made into nets for catching game. M'boomboo (Kis.).

Moosanna (Kin.), *Combretum,* sp. A heavy wood of a large tree, used to prepare bark-cloths upon by beating. M'bāngo (Kis.).

Moosimbatee (Kis.), not determined. A timber seen at Pungani, brought from Delgado, and being made into native boats. Simbati = a wood brought from near Cape Delgado (Steere).

Moossakooneeæta (Kin.), not determined. Shrub, with stone fruit. It is used by the natives for scrubbing their teeth.

Moowāle (Kis.), *Raphia,* sp. (Kirk). The young fibre of its leaves, called "ootembweh," is used as fiddle-strings, thread for sewing and for stringing beads. It is imported for these purposes from Ugiji to Kazeh. A soft cloth is made of its fibre in Madagascar and also in Gooa, near Tanganyika Lake.

Moshoo (Kin.), mosho = smoke; not determined. Small tree, with lanceolate glossy leaves. Bark so soft, like sponge-cake in colour and texture, that it can be crumbled away by the nail. Stone fruit? The wooden milk-pots of the Wanyambo are fumigated with its roots. A thick dark gum accumulates in the cells of the bark.

Moveela (Kin.), not determined. Out of leaf in August. A large, noble tree; inflorescence now a small capitulum; stamina numerous; pistil one; four sepals, four petals. Probably the same as the movoolie (Kis. & Kig.), which is used on the east coast in boat-building.

Mowaleh (Kin.), *Lonchocarpus laxiflorus.* Shrub tree, with lilac-smelling and -coloured blossom in January.

Mua (Kis.), *Saccharum officinarum,* L.: mua=sugar-cane (Krapf & Steere). Observed only in Uganda, where the people chew the cane, not knowing how to express the juice.

Muafi, Krapf's trees.

Muelle=cereals (Krapf): mwere=very small grains (Steere).

Myoogwah (Kis.), *Colocasia antiquorum*: lombo (Keeao), a vegetable.

Myoongee (Kis.), *Sagittaria obtusifolia.*

The prefix M implies Miti=tree, when put before the name of a fruit; thus M'nazi signifies the tree of the nut, nazi being the nut, and M signifying tree, and so on, in the following names of trees.

M'bambakofi (Kis.), Krapf's forest trees.

M'bango (Kis.), or m'banga (Kin.), *Combretum,* sp. Forest tree, 12 feet in circumference: wood heavy; bows made from it are esteemed. Its honey is red, and bitter to the taste.

M'bawa (Kis.), *Soymida,* sp. Trunk 15 feet in circumference and 20 feet long before branching: canoes are formed of it. Gum shining, transparent, and wax-coloured, with disagreeable odour.

M'bareeka (Kis.), *Ricinus communis.* A variety called the m'bono, with smaller fruit and a smaller plant, yields a stronger-scented oil than the m'bareeka, and is only used as a medicine, whereas the m'bareeka oil is applied externally to the body. Mafuta ya m'bareeka=castor-oil (Steere), *Ricinus communis* (Kirk).

M'beegeerree (Kin.), *Trapa natans*: m'geerree=a pig. They eat the roots. Found its seeds on the shores of the Victoria Nyanza; and the plant was growing afloat on the Katonga river.

M'beer (—), *Musa,* sp. Made into wine. A luscious banana.

M'bela, or M'pela (Kin.), *Ficus,* sp. An enormous tree; bark chipped off by natives.

M'boomboo (Kis.), or moo-oomboo (Kin.), *Odina Schimperi.* Nets for capturing antelopes alive are made from its roots.

M'cæker'a (Kin.), *Embelia,* sp.

M'cætæ (Kin.), not determined. Its straight branches serve the purposes of our willow wands: excellent trays are made of them by the natives of Unyoro. The roots are chewed, but have no taste.

M'cæwæ (Keeao), *Crotalaria glauca*. The people of Madi eat all of it but the root as a vegetable. *Vide* Meetwai for a tree of this name.

M'ceekeezzee (Kin.), *Acacia*, near *seyal*. Its inner bark is made into rope.

M'ceembee (Kin.), not determined. The natives scrub their teeth with its branches.

M'ceenambassa (Kin.), not determined.

M'ceenāngo (Kin.), *Harrisonia abyssinica*. A shrub with very tender leaves and arched branches; its thorns catch one's clothes.

M'ceengeer'a (Kin.), *Flacourtia* ?, sp. Low tree, with straight thorns and soft dull green alternate leaves.

M'ceenzee (Kis.), probably the mangrove, *Rhizophora mangle*. Used as a tan; wood makes the best ribs for boats, bed-frames, &c. Good but not a heating fire-wood. Mangrove = mkoko (Steere).

M'cheng'a (—), *Brachystegia spicæformis*. Tree with light graceful foliage, covering the Unyamezi forests. Bark is made into round boxes and cases for grain. Its fibre is useful as tinder, and for making kilts. "Chenga" of Livingstone.

M'cheræ (Kis.), *Ficus*, sp. One of the bark-cloth tribe. M'chele = rice.

M'cherengeh (Kis. & Kar.), not determined. The milk-pots of Karagweh are made of its dark hard wood.

M'chongōmah (Kis.), *Acacia*, sp. Lofty tree, with remarkably small leaves. The roots are said to have a pleasant odour 100 yards off.

M'chōōnchoo (Kin.), *Balanites ægyptiaca*. Trunk six feet in circumference, rather weeping branches; bark black, closely and longitudinally striated. The natives of Madi eat its bitter plum, and extract oil from it to anoint themselves. Choongoo = bitter.

M'choowee (Kin.), *Sclerocarya birrea*, Hochst. In December, found a tree, of ten feet circumference of trunk, in fruit. Bark grey, cut red and sticky; wood said to be red: fruit, when green, is small, lime-size; sarcocarp apple-scented and fleshy, on being cut it flows with tasteless but sticky water, which bites a sore; contains one large stone, with one or two kernels; these are milky, and eaten like the *Arachis hypogæa* ground-nut. Grain-pestles and stools are made of its wood. Probably the m'soowee (Kin.) is the same, though this has sweet-briar-scented leaves.

M'deem (Kis.), *Citrus aurantium*: m'dimu = lime-tree (Krapf). Cultivated by the Arabs at Kazeh.

M'dellasini = cinnamon-tree (Krapf).

M'djeye, tree (Krapf).

M'doogootée (Kin.). Its wood is made into arrows.

M'dshani, tree (Krapf).

M'dshe, tree (Krapf).

M'fō (Kin.), *Hymenodictyon*, sp. A useless shrub, with clusters of dull purple seed-vessels of the size and shape of olives. M'poomvea (Wakeembo).

M'foof'oo (Kin.), *Terminalia*, sp. allied to *T. macroptera*. A fine large handsome tree. The wood under the bark is of a lemon-yellow colour, and watery; it is used by the natives for tinting their bark-cloths. The seed is as sweet as an almond.

M'foolo, or M'foo (Kin.), *Vitex*, sp. Uncertain in its fruiting. In flower August, in fruit June. Its fruit obtained twice to four times in one year. A handsome umbrageous tree. *Vitex*, sp. (Kirk). Fuu = a fruit (Steere).

M'fooloongoo, or m'foolongoh (Kis.), ? *Strychnos*. An orange-bush-like shrub, covered with monster-like oranges, full of pulp; when ripe their outside is hard, like the rind of cheese; not edible. The leaves are single, and their tips are as sharp as needles.

M'foomah (Kis.), not determined. Small forest tree, with compound leaves; flowers in round heads, not developed in September.

M'foombweh, or M'foombwa, or M'foombeh (Kin.), *Carissa*, sp. Its fruit is eaten. The bark of the roots smells disagreeably, and is taken as a remedy for cough; or it is made into a powder, mixed with oil, rubbed in the body to bring on perspiration in fever. It has no taste. M'foombeh, a two-feet-high plant, is used by Watusi to dye their gums blue or black.

M'footamvool'a (Kin.), *Acacia hecatophylla*. A very handsome tree, with jasmine-scented flowers. The steam from its boiled roots is considered a remedy for ophthalmia; the face is washed with the liquid.

M'funda, tree (Krapf).

M'galambootee (Kis.), *Asparagus*, sp. The roots are chewed by the natives, and the liquid so formed is squirted into the eyes of those suffering from ophthalmia.

M'gandshu, forest tree (Krapf).

M'gazoo (Kin.), *Balsamodendron africanum*. Its sticky milky juice is scentless. Plentiful in Ugogo forest. The people boil its gum and mix butter with it to anoint and scent their bodies. "Katatee" of Ugogo.

M'gembeh (Kis. & Ugogo), *Dalbergia melanoxylon*. Its hard wood is made into hammers and mallets used in preparing bark-cloths.

M'gnamēēta (Kar.), not determined. Plum-tree. Fruit has three stones; branches very pithy; leaves 3 by 2 ovate.

M'gnambo, tree (Krapf).

M'gniomfu, fruit-tree (Krapf).

M'gobolla (Kin.), *Adenium*, sp. A three-feet-high bush, with scarlet flowers (Feb.); the branches taper in a remarkable quick manner.

M'gologōmah (Kin.), *Sterculia*, sp. Gum transparent. The Sultan of Ukuni has his sleeping-hut tied with the bark of this species.

M'goolook'a (Kin.), not determined. Small thornless tree, with light-coloured bark; its roots scent the air for some distance.

M'goolookeer'ra (Kin.), ? *Ficus*, sp. A tree-climber, ankle or more in thickness, throwing out air roots only from near its summit, where the soft leaves break out into rich foliage. I have seen it completely encircle the tree it was supported by, and become a noble-looking tree. Its bark is made into good rope.

M'gooloongooloo (Keeao & Kis.), ? *Strychnos*, sp. Tree with orange-like sweet-tasting fruit. Seeds have a skinny envelope, are semitransparent, and like a rather flat acidulated drop; they are in a yellow pulp. M'phoondoo (Kin.). Leaves single, shining, and in tufts.

M'goongoo. *See* M'koongoo.

M'goongwah (Kin.), *Acacia*, sp. Fine lofty tree; wood remarkably heavy, black, like rosewood, and made into axe-handles &c.

M'gootweh (Kis.), *Cucurbitacea*. A useless gourd, and not edible.

M'grafu, clove-tree (Krapf).

M'gurure, teak wood (Krapf).

M'hondo-hondo (Kin.), nearest *Gardenia*, sp. Flowers in erect bunches of large white bells, and richly scented; fruit russet-brown. A bushy tree growing by streams.

M'hoongo (Kis.), *Landolphia florida*? Tree-climber, with tortuous stem, splendid foliage, and scented white flowers, in December. Its juice cannot easily be rubbed off the hands; but that of the rubbers called ookōmbe (Kis.) and m'peera can. The natives make this distinction.

M'jungwa, orange-tree (Krapf).

M'kalambaki, forest tree (Krapf).

M'kam'ee (Kin.), not determined. A twiner, with beautiful green leaves, yielding rope-fibre (obtained). Elephants eat its roots.

M'kandara (—), not determined. Grows in tidal rivers, like the mangrove; but the roots cannot be walked on. Its bark is a red dye. The wood is used for building, and is a first-class firewood.

M'keendambogo (Kin.), *Bauhinia Thonningii*, Schum. Scarlet flowers; seeds rattle in the pods. Its bark used as rope (short). The leaves are applied to sores. Bogo (Kin.) = wild buffalo.

M'keendwanzagamba (Kin.), *Albizzia rhombifolia.* Small bushy useless tree, with leaves soft as velvet on both surfaces.

M'keetchwa (Kis.), *Amaranthus Blitum.* Its tender shoots are eaten as a vegetable mixed with ground-nuts.

M'kessæ (Kin.), not determined. Seen in the Bari country; 12 feet circumference in trunk.

M'kokah (Kin.), not determined. Thickets of it. Stone-fruit in dense umbels.

M'koko (Kig.), ? *Ficus,* sp. One of the bark-cloth trees of Uganda. M'koko=tree (Krapf).

M'kōla (Kin.), not determined. Trunk 12 feet in circumference. Wood made into drums and quivers. Its young leaves are eaten as a vegetable. The m'kolola (Kis.), ? *Ficus,* is probably the same.

M'kōma (Kin.), *Grewia mollis.* Twelve feet in circumference. Wood has a black heart, is used in building; no insect penetrates it; excellent for bows. Fruit small, and pleasant to the taste. M'koma manga=pomegranate; manga=foreign (Kirk); m'koma manga=fruit-tree (Krapf); koma=a fruit (Steere).

M'komāfi, forest tree (Krapf).

M'kōmeh (Kin.), ? pomegranate or ? *Strychnos.* Its bitter-tasting large fruit is eaten in dearths; its thorny-tipped leaf is used in cases of fever by inserting the point in cuts made in the body.

M'kōmeweh (Kis.), *Abrus precatorius.* The seeds are used as counters in the game of "Bao." The natives boil its roots, mixed with grain, and eat them as a cure for swollen testicles; vomiting is said to be a result.

M'konazi (Kis.), *Zizyphus jujuba*? : kalembo (Kin.), which see; nazi=a nut or plum. *Zizyphus* (Kirk). Kunazi=a fruit (Steere).

M'kong'eh (Kis.) and Veekongeh (Kin.), *Aloë,* sp. The plant from which the Waganda make their best ropes, namely those by which criminals are tied.

M'konjay (Kin.), not determined. The wood of this is like our hazel, and is made into walking-sticks. M'kongojo=an old man's staff (Steere).

M'konothembo (—), *Musa,* sp. A large and coarse species of plantain. Thembo=elephant.

M'koo (Kis. & Kin.), *Ficus Kotschyana.* Trunk 12 feet in circumference, with huge tortuous boughs. Old bark scales off, like that of the sycamore; young is made into bark cloths.

M'kooa (Kin.), *Hexalobus senegalensis.* Wood like that of our lead-pencils. The plums, red without and within, are used by Central-Africans to make their gums red.

M'kookoo (Kis.?), *Ficus riparia.* Saw a green pigeon busy eating its figs in October. M'kookoo=a fowl.

M'kookootee (Kin.), not determined. A heavy wood, made into spear-handles and charcoal.

M'koolookootoot'oo (Keeao) and Ceemampeea (Kin.), not determined. A bushy shrub, with excellent plums, the size and colour of greengages, but with the stones shaped like the eighth of a sphere. Seed is bitter to the taste.

M'kooloongoo (Kin.), M'koonoongoo (Kis.), ? *Aurantiaceæ.* The incised bark has a strong scent of citron. The wood is used as tooth-scrubbers, and is pleasantly sharp-tasted, inducing saliva. It is highly prized for building small huts, as insects cannot penetrate it. The leaves are mashed with water, and taken for stomach-complaints. Bark cloths are scented with the steam from its boiled seeds; the powdered bark is a scarlet dye.

M'koomba (Kis.), ? *Ficus,* sp. A rubber used as bird-lime; and its bark is made into cloths. Immense leaves.

M'koondee, allied to *Zygia* or *Pithecolobium.* At M'bwiga, on the 1st of November, we pitched camp under this tree; its trunk measured 27 feet in circumference at four feet from the ground; and the flower was a spherical pink tassel, with two remarkably long pods, like leather straps, attached to the same branch. Known to one of our men, a native of Madagascar. Wood said to be useless. A section of the trunk is the shape of a starfish. Leaves compound.

M'koongoo (Kis.), almond-tree. Seen only in Zanzibar island, where the Banians use its leaves as plates. Lozi=almond (Steere); mkungu=the fruit-stalk of Bananas (Steere). =A king's officer in Uganda.

M'koongooroombeh (Kis.), not determined. A brushwood, from which arrows, lip-ornaments, and powder-measures are made. M'kooroombeh (Kis.) is another brushwood used as firewood.

M'koossa (Kin.), probably *Ficus*, sp. A handsome tree: its leaves are large, rough, and sticky; they are used in polishing the handles of spears.

M'kooyoo (Kis.), *Ficus*, sp. Encamped under it several times. Bark-cloths are sometimes made from it. The figs grow in twos or fives upon the large boughs or branches.

M'læwæ (Kin.), *Celtis integrifolia*. Trunk 12 feet in circumference. Seems a brittle, useless wood. The natives of Feepa make necklaces of the stones of its fruit.

M'lallakooa (Kin.), *Erythrina*, sp.: m'teepee-teepee (Kin.). Trunk 10 feet in circumference. The bark is corky, and made into shields; the seeds are worn as wreaths by the Waganda; a red gum exudes.

M'lama (Kin.) *Combretum*, sp. Moderate-sized ugly tree. The charcoal used by the blacksmiths of Unyoro is of this wood. Its leaves being coriaceous, are used in cleaning out the wooden milk-pots of the natives.

M'landala (Kin.), *Combretum reticulatum*.

M'leha, forest tree (Krapf).

M'limau, citron-tree (Krapf).

M'loolooma (Kin.), *Sterculia cinerea*. Trunk 10 feet in circumference, with clear gum. Seeds were eaten raw by our native porters.

M'nanazi, the pine-apple.

M'naninga, forest tree (Krapf).

M'nazi, the cocoanut-tree: m'nasi=cocoanut-tree (Krapf, Kirk, & Steere).

M'niolola (Kis.), *Corchorus antichorus*: niolola=chain. A vegetable that is stringy or chain-like when boiled.

M'nyala (Kin.), *Euphorbia*, sp. This is the common fence of the villages in Unyamezi; a stockade is made with it; and a ditch surrounds the whole.

M'nyembe (Kin.), *Swartzia marginata*.

M'nyemvee (Kin.), *Mimusops Kummel*, Bruce. Lofty tree with rich green foliage. Birds are fond of its stone fruit, which has the taste of a dry date; the seed is unpleasant to taste, and is of a yellow colour.

M'pæcæ (Keeao), *Æschynomene indica*. Wood made into floats for fishing-nets in Heeao.

M'pæfoo (Kin.), *Croton*, sp. Trunk 30 inches circumference. M'pæfoo=ripe, speaking of any fruit.

M'pækætoo (Kis.), not determined. Building and firewood; leaves 6 by 3 inches.

M'pæla (Kin.), *Adansonia digitata*. The largest trunk measured was 54 feet in circumference. Parasites occasionally found upon this tree. The gourds are made to draw water. Seeds mashed in water are refreshing on a hot day; wood useless.

M'pæpæ (Kis.), *Æschynomene*, sp., used as floats for nets; also a tree denoting the presence of copal gum, probably a *Trachylobium*.

M'palanyonga (Kin.), *Hymenocardia Heudelotii*. Small tree with soft white bark; wood brittle and useless.

M'pangweh (Kin.), not determined. Shrub 3 feet high; young shoots are eaten; fruit makes a red dye.

M'papa (Kin.), not determined. The wood of this resembles the fir-wood boxes we have in camp. At Madi, found a round shell-shaped pod like one half of a bivalve, with two seeds, which was called the seed-vessel of the m'papa. This legume answers the description of *Trachylobium* in being two-seeded and very obtuse.

M'papai m'weeto (Kis.), *Carica papaya.* Wild papaw tree. Drums and harmonicons are made of its wood. M'papayi=the papaw tree (Steere); m'papāyu=fruit-tree (Krapf); m'somōlo (Kin.).

M'paramiss (Kis.), the Goodæ tree with straight, slippery, yellow trunk. M'paramuzi, a sort of tree said to be unclimbable (Steere): wood made into boats and drums.

M'peendeembee (Keeao), *Vitex*, sp.: m'thalassee (Kin.). Large shrub, with tamarind-tasting red plum.

M'peeng'ee-peeng'ee (Kin.), *Vitis cornifolia.* Three-feet-high shrub, with very thick joints; fruit, when green, is dotted with pink spots at the apex, and is pear-shaped; no thorns, no tendrils, and not pleasant to eat. Unknown to most of our men.

M'peengo (Kis.), *Dalbergia melanoxylon*: m'gembe (Ugogo); m'teendeea (Kin.). Wood hard and made into mallets, arrow-tips, &c.; flowers white and sweet-scented. M'pingo (Krapf & Steere).

M'peenjee. *See* M'tondwa.

M'peera (Kis. & Kin.), an India-rubber tree. The rubber is made into playing-balls for children and also used as bird-lime. Ookōmbe is its "brother." M'pera=Guava (Krapf, Steere, & Kirk); m'pela=Indian-rubber (Steere).

M'pelekōma (Kin.), not determined. Plum has four stones; leaves 4 by 3 inches, coriaceous and closely serrated.

M'pembæzoo (Kis.), not determined. Slender tree used in building; roots are a purgative.

M'pemboo (Kis.), *Sclerocarya birrea,* called M'choowee (Kin.), which see.

M'pogōllo (Kin.), ?*Entada abyssinica.* Trunk from 30 inches to several feet (12) in circumference: wood made into arrows and firewood.

M'poo-heeoo (Kin.), *Rubiaceæ.* Trunk 30 inches in circumference; bark yellow and scaly, wood light, flowers white. The root burnt and powdered has the virtue of curing a swollen limb when rubbed into cuts made with a knife; but the patient must sit beneath the tree during the operation.

M'poomvea (Wakeembo), *Hymenodictyon,* sp. M'fō (Kin.), which see.

M'poonga (Kis.), *Oryza sativa.* M'punga=rice (Steere).

M'popo m'weeto (Kis.), *Dracæna,* sp. The wild beetul,—grows to 15 feet. M'popo=the areca palm of Zanzibar, &c.; m'popo m'sito=bush areca palm (Kirk); popo=a bat (Steere).

M'quæt'æ-quæt'æ (Kin.), *Rhamnus,* sp. Shrub with berries resembling red currants: these and the leaves are a fish-poison; but it is said the leaves would do no harm if they got mixed with vegetables.

M'safwah (Kin.), *Eugenia owariensis.* Bark of a red-white colour and scaling; trunk 20 to 30 inches in circumference; leaves of a very yellow colour; petiole reddish, with a twist, but not enlarged at the inner end; fruit edible, one-stoned, walnut-size, varied in colour, tastes coolly as a cucumber, and much of its watery taste; flowers white, in a large mass, hang down with their weight, a few of the bunch only becoming developed; timber is red and cross-grained to work.

M'sakāfoo (Kin.), not determined. Thorny shrub; 3-foliate, straight-branched; fruit not edible. M'sakafoo=the tree of roofs—perhaps timber used in roofing houses (Kirk); sakafu=stone roof or floor (Steere).

M'saker'a.

M'salla (Kin.), *Acacia seyal.* Grows to 10 feet in circumference of trunk. At 9° north lat. there were forests of smaller trees. Many of them had their branches rudely torn down; we imagined that elephants had been eating the ripe pods. The fresh gum is of a bright amber-colour; when dry it is brittle and white, like old crumbs of bread. The scent from the flowers is extremely rich.

M'sambeea (Kin.), not determined. Tree with 3-foliate leaves, leaflets 5 by 2 inches, and general aspect of a mango-tree. Inflorescence and fruit erect and terminal; fruit sparrow-egg-size, but elliptical, bright glossy red, mango-tasted without acidity. The green seed has no *stone* covering it, but a fibrous network easily bitten through. The fruit seems not to be eaten by birds; I think it may be because the large elliptical seed tastes so strongly of turpentine.

M'samvoo (Kin.), *Ficus,* sp. Immense tree, with air-roots from its boughs. Figs stood upon and around these boughs, looking as if they were mushrooms.

M'sandarusi (Kis.), *Trachylobium.* M'Toondroossee (Keeao), the copal tree. The M'pæpæ (Kis.) is its "brother."

M'sangal'a (Kin.), ? *Albizzia Lebbek.* The colour and general appearance of its young healthy branches is that of our mountain-ash.

M'sangar'a (Kin.), *Odina fruticosa.* Lofty tree, trunk 6 feet in circumference; the bark scales off like that of a fir tree; breezy foliage; gum sweet and red; wood made into posts and beams.

M'sangarassa (Kis.), not determined. The shoots of the season, after dropping their leaves, ripen into solid, straight, thorny rods, which are converted into arrows: leaves 5 (or more?)-foliate; these are pale, with shining surface. Infants are washed in a decoction from the leaves when they lose their mothers; they are thus supposed not to forget their mother! The young leaves are remarkably tender.

M'sangoo (Kin.), *Sesbania ægyptiaca.* M'aweengo-weengo (Kis.) = the clouds—probably from the noise the seeds make in the ripe pods when the wind shakes the tree; wingo=clouds (Steere).

M'sangool'a (Kin.), *Rhus glaucescens.* Small tree; its leaves and flowers are sweetly scented: the wood is one of the tooth-scrubbers used by natives. Light and airy foliage, light bark and straight branches. If the seeds are cast about, one is certain to come upon a vegetable fit to eat. Sungura=a hare.

M'sankwa (Kin.), *Kigelia pinnata.* Milægæa (Kis.), which see; Moongootwa (Keeao).

M'seēgwah (Kis.), *Musa ensete.* Its black irregularly shaped seeds are worn as ornaments round the head, neck, or ankles. M'tembeh (Kin.).

M'senswanoma (Kin.), *Albizzia rhombifolia.* Neither the tree nor its leaves used.

M'sĭkurdasi, forest tree (Krapf).

M'sōko (Kin.), *Ficus,* sp. M'chæræ (Kis.), already named. Air-roots.

M'solankanga (Kin.), *Asparagus,* sp.: kanga=the guinea-fowl; they eat its berries. M'galamboottee (Kis.), which see. The regular honey-bee all over its flowers in November.

M'somōla (Kin.), not determined. This tree branches in a remarkable manner. At 8 feet from the ground it branches into four, six, or eight; these subbranches again branch from one whorl as it may be, and so on. The leaf is 7-partite with 2 feet of petiole; at the first point of branching the withered fruit-stalks (?) hang like twisted ropes for 2 feet.

M'sōōwee (Kin.), *Sclerocarya birrea,*=M'choowee (Kin.), which see.

M'swake (Kis.) = toothbrush; arāk (Egypt), *Salvadora persica.* A large bush with white bark and now (March) bearing small, green berries. Its branches were used by our followers as tooth-scrubbers. Msuaki=toothstick or brush (Steere).

M'sweera-m'dogo (Kin.), *Cycnium,* sp. n. Crawling plant, dries black, and used in snake-biting cases. M'sweera (Kin.), a small thornless tree with silver-grey bark and shining leaves like our bay: fruit 2-celled and the size of the coffee-berry. ? *Rubiaceæ.*

M'sweet'æ (Kin.), ? *Psychotria.* Shrub, with sweet-tasting, scarlet, currant-sized berries. The pulp, though sweet, is not eaten; the wood being straight, is used for making huts; leaves dark dull green, paler below.

M'tæloambai (Kin.), *Crossopteryx febrifuga.* A bushy tree or shrub, with strongly and sweetly scented flowers. Its toasted seeds are used in scenting bark-cloths, or they are pounded, mixed with grease, and rubbed over the body.

M'talawānda (Kis.), not determined, ? *Labiatæ.* They eat its fruit at the river M'gæta; leaves large and shining; wood like walnut, and made into gun-stocks and long drums.

M'talla (Kis.), *Ficus,* sp. Fruit of the shape, size, and appearance of a small pear.

M'tama (Kis.), *Andropogon sorghum*: m'tama (Krapf); doora (Egypt). Without this the Central-African could not have his intoxicating drink; it takes the place of the hop with us; and the cattle eat its straw.

M'tāo-tāo (Kin.), *Anona senegalensis*. Small tree with plum-tree or silvery-grey bark, very finely striated; fruit a red edible plum; wood straight, and used for the handles of hoes. M'tata= forest tree (Krapf).

M'tatee (Kin.), not determined. This tree is the best for bows; the wood is cedar-colour; fruit edible; grows to a great size. M'tata=forest tree (Krapf).

M'tawa (Kis.), *Ficus*, sp. One of the bark-cloth trees.

M'teendeea (Kin.), *Dalbergia melanoxylon*, =M'peengo (Kis.), which see.

M'teepee-teepee (Kin.), *Erythrina*, sp.,=M'lallakooa (Kin.), which see.

M'teessa (Kig.), not determined. Tree with a larger and longer stem than any palm I ever saw, the foliage at its top looking like an umbrella. Seen in the deep dells of Uganda, and by Speke on lake border. Its fruit has a stone similar to *Vitex*; these are strung round the ankle to give strength to the leg. =Meesōlo (Kin.), which see.

M'teloandeb'weh (—), *Bryophyllum calycinum*. Very herbaceous plant, growing in the shade of a huge tree, and grown as a medicinal plant in the Madi villages.

M'tembeh (Kin.), *Musa ensete*, Bruce. Its black glossy seeds are worn as necklaces, &c. M'seegwah (Kis.), which see.

M'thalassee (Kin.), *Vitex*, sp.=M'peendeembee (Keeao), which see.

M'thoozeea (Kin.), *Celastrus senegalensis*. Shrub: pink upon the branches and upper portion of the petioles; pink thorns $\frac{3}{4}$ inch long. Both surfaces of the leaves have a remarkably vivid hue of green without gloss; if rubbed up, they smell of hay or of a *Rumex*. Manua assured me it had neither flower nor fruit. They were unknown, and for months I failed to get one; but on the 26th December one in flower occurred: flowers white, and no thorns, except upon the main stem. On the shoot of the season a tender thorn appears in the leaf-axil; the following year, when the leaves have fallen, this thorn is woody and a fresh shoot has grown from *above* the thorn. Women use a decoction of its roots, when in suffering, about the time of childbirth.

M'tobweh (Kis.), not determined. A coast-wood, so elastic that the ends of a bow will meet before the wood breaks. M'tobwe=a wood for walking-sticks (Steere).

M'tomōko, fruit-tree (Krapf).

M'tondō (Kis.), *Barringtonia*, sp. Its timber is imported to Zanzibar from Madagascar as planking. Fruit said to be sucked and the stone thrown away. M'tondoo=oil is made from the seeds (Steere). Tondo=oleaginous plants (Krapf), *Barringtonia*, sp. (Kirk); m'tondo=forest tree (Krapf).

M'tondwa (Kin.), *Ximenia americana*, =M'toondwah (Kin.). The kernels are toasted, pounded, boiled, and an oil taken off, with which the natives rub their bodies. Trunk pale; branches green-barked; drupes shining red, rather acrid. =M'peenjee (Kis.), more of a shrub than a tree.

M'tonga (Kis.), probably *Brehmia spinosa*, =M'wāg'eh (Kin.). Bushy tree, erect trunk; bark rough, of a pale clay-colour; leaves numerous, shining, deep green; thorns black-tipped. The pulp of the fruit is eaten; seeds numerous and red, flat upon one side and convex upon the other. Wood used in building.

M'toogool'oo (Kis.) not determined. Tree with a trunk 30 inches in circumference. Children play with the balls of the fruit, which is not edible.

M'toombatee (Kis.), *Leguminosæ*. 12 to 20 feet in girth. Leaves 7- to 9-foliate; wood used for grain-mortars, pipe-bowls, &c. The fruit mashed is a cough-cure. The wood smells agreeably, and is of a rosewood tint. =Mininga, which see. =? Moosimbatee (Kis.).

M'toondoo (Kin.), not determined; ? *Afzelia*. Immense tree: fruit not edible. Drums, beams, and troughs are made of its wood, and huge band-boxes are made of its tough bark. My plants were dried by having thick boards of its bark placed between the papers; they were light and tough, and deposited at Kew.

M'toondoo (?), *Amomum*, sp. An underground fruit seen upon the equator. It is plantain-size, with

scarlet peel; and the pulp has a refreshing lemony taste. The leaves were known to our followers, but not the fruit, probably because its habit was unknown to them. A very interesting plant. The Waganda decorate themselves with this beautiful fruit. Matoongoola (Kis.).

M'toondooroo (Kin.), ?*Acacia*. 16 inch circ.; thorns single; the seeds grow together in a ball; goats eat the leaves.

M'toom'wew (—), not determined. The wood of this tree resembles that of our ash, and is made into bows by the Feepa people. It is said to have a stone-fruit; and the stones (the colour of white porcelain) are worn like bead necklaces.

M'toopa (Kis.), *Euphorbia antiquorum*. Meelangarree (Kin.), which see. Tree Euphorbia, stem 4 feet 7 inches in circumference. Its milk is said to be poisonous. The "quol-quol" (?) of Abyssinia.

M'tope-tope (Kis.), custard-apple, Zanzibar. M'tope-tope=custard-apple (Kirk & Steere).

M'veeng'e (Kis.), *Æschynomene indica*. "M'pæcae" (Keeao); "solah" or pith-plant of India.

M'vooleh (Kis. & Kig.), not determined. Erect, handsome large tree, with compound leaves, not edible; canoes and planks on coast. M'fule=forest-tree (Krapf).

M'voomo (Kis.), *Borassus æthiopicus*: meelalla (Kin.). The leaves make a brilliant torch, the roofs of huts, and fences. At Mininga the juice of this tree is collected three times a day. Length of a fallen tree 37½ feet, greatest circumference 9 feet 3 inches, four feet further up 7 feet 1 inch. The undeveloped leaves are used for the reeds of flagiolets in Africa. "Deleb" of Egypt.

M'voo-oh (Kis.), not determined. Moveelā (Kin.), which see.

M'wag'eh (Kin.), probably *Brehmia spinosa*. M'tonga (Kis.), which see.

M'waleh-waleh (Kin.), not determined. The wood of this resembles that of a deal case in our camp.

M'wang'a (Kin.), *Combretum*, sp. Its wood is said to be heavier even than the *Dalbergia melanoxylon*, and so hard that the natives have to bury it in water or heat it with fire before they can cut it with their tools. M'bango (Kis.), which see.

M'wannee (—), *Coffea arabica*: buni=coffee-berries (Steere). I should say that the coffee-shrub is in its wild state on the shores of the Victoria Nyanza, when I consider that several allied genera are found in the same country. The natives gather the berries in large quantities; in one hut I counted ten sacks full. The berry is gathered before it is thoroughly ripe; at least I say so because the seed in the husk is so *small*, and because it softens so quickly in the mouth. The natives eat it in this state to make them endure hunger and, may be, thirst; but it was remarked that those natives who were most addicted to eating the berry were dissipated-looking in appearance, and like the wan-looking opium-eater. Another reason for supposing that it is indigenous to the slopes above Victoria Nyanza is, that there is no probability of any one ever having imported it there; for if they had, the berry would be used in the form that the Arabs and ourselves know it, and not as a mere stimulant in the mouth.

The effect of chewing it is much the same as that described to be produced by the plant called Coka, grown on the eastern faces of the Andes, in Bolivia, and eaten by the natives there; for it allays hunger and thirst, and produces a power of endurance, or it might be called a certain liveliness, as long as you continue to chew it.

M'wāvee (Kis.), *Tragia cordata*. This creeper stings more painfully than the nettle.

M'weela (Kin.), *Ficus*, sp. M'kooyoo (Kis.), which see. This is the genuine fig-tree of our followers.

M'wombweh (Kin.), *Acacia catechu*. Tree with yellow scaling bark, and the most woody thorn met with.

M'yezi (Kin.), not determined. The palm from which an oil is obtained by boiling the liquid ladled out from a well made at the summit of its trunk. This oil is considered superior to suet in cooking. Common, I am told, at Ugiji on Tanganyika lake.

M'yokka-yokka (Kis.). Moderate-sized tree; a decoction from the bark of its root and stem is red, tastes more bitter than quinine, and is taken medicinally.

M'zambarao (Kis.). The jamli tree, not seen since Zanzibar, but said to be plentiful in Heeao. Tooth-

scrubbers made of its wood. Msambarao (Krapf), a kind of stone-fruit, not unlike a large damson (Steere).

M'zanza (Kin.), probably a *Protea*. King-geezzee (Keeao), which see. Flowers very large and handsome; they are worn in wreaths by the natives. On the 17th Dec. came on a tree 10 feet high, 20 inches circ. of trunk, with charred bark, finely striated, and cutting red; wood white, with many open cells; in full flower each flower opened out flat to the sun as large as the largest sunflower.

M'zazza (Kin.), *Boscia salicifolia*. Moderate-sized tree. Inflorescence terminal generally; stamina ten and upwards, they hang above and over the turned-down sepals; pistil elongates into a pointed knob.

M'zeema (Kin.), not determined. Tree with the trunk 6 feet in circumference; its leaves mashed make a black dye. Mzima=alive, sound (Steere).

Năkēetong'-oh (Kin.), *Withania somnifera*. Found near old habitations. Scarlet fruit, with white three-cornered seeds. The natives believe in this plant having certain charms; the Sultan of Ukuni had its roots hung over his door, for the purpose of bringing him many welcome visitors. A Nubian, when asked what its properties were, replied by rubbing his naked arms, as if the plant had soothing qualities.

Nakōma (Kig.), ? *Ficus*. One of the bark-cloth trees of Uganda.

Namoonyew (Kis.), *Musa*, sp. A kind which is eaten boiled.

Nanāha (Kis.), *Datura stramonium*. Its fibre is macerated and made into matting.

Nasihansha=gum (Krapf).

N'deeree (Kin.), not determined. The natives use the roots of this plant in fevers, by boiling the fibrous roots and drinking the water.

Ndeezee (Kis.), *Musa sapientum*: ndizi=plantain (Krapf). This fruit, eaten off the tree, boiled, or made into wine, is the chief food of the people of Uganda, where vast quantities are required, as the population is large.

Nduriasa=Krapf's cereals and vegetables.

Neeno (Kigani), *Hyptis spicigera*. Strongly scented plant, cultivated at 3° N. lat. for its grain, which is eaten roasted. Oil is extracted from the black and red seeds. Our followers knew this to be a species of "Rehan,"=mint, namely a *Hyptis*.

Nganoo (Kis.), *Triticum sativum*. Not observed till reaching 15° N. lat., in Egypt, where it is cultivated by irrigation. Many parts between 2° and 15° N. lat. are admirably adapted for its growth. Ngano=wheat (Steere).

Okra (—), *Hibiscus esculentus*. The "bamea" of the Arabs (Kirk). Grows to 14 feet high.

Ookeendoo (Kis.), palm tree not above 6 feet high. The servants of traders, when at Karagweh, make sleeping mats with its leaves. Its presence is said to denote water; and this opinion is generally correct. M'kindu=a palm made into mats (Steere).

Ookōmbe (Kis.), not determined, but described as a rubber climber, like its "brother" the M'hoongo (which see), *Landolphia florida*. Keekōmbe=a cup in Kis.

Ooleysee (Kis.), *Eleusine coracana*. A common and useful grain in Central Africa. Its flour, mixed with that of *Andropogon sorghum*, makes a pleasantly bitter drink after fermentation; and bread from it is agreeably acid, but when made into porridge it is a failure. It is sown in ridges with other grains, or broadcast, and is reaped early in December.

Pāndeh (Kis.), *Voandzeia subterranea*,="Joogoo," which see. A round, shrivelled-like, hard-husked, white kind of bean, the size of a monster pea. When boiled, the first water must be thrown away. Very tough, rather nutritious, but flatulent. Sown with Indian corn in ridges. Flower yellow, at the *root* of the plant, where the pod develops under ground.

Peereepeeree (—), *Sorindeia madagascariensis*. Lofty tree, 8 feet circ. of stem, with dark green foliage.

In the month of October, at 7° S. lat., it was in full leaf, flower, and fruit. The latter hang like bunches of grapes, but in a remarkable manner, from the trunk or boughs of the tree, mostly separate and away from the leaves. Each fruit is a plum, sparrow-egg size; and 200 of these may be in a single bunch 2 feet in length; they are yellow, of a sweet, sour, or turpentine taste, not much pulp, with rather a compressed stone. The flower of this tree is very diminutive; the calyx is cup-shaped, with five angles; the corolla is twice the length, and of five parts. Seen nowhere except by rivers near the coast.

Podsho = Krapf's cereals and vegetables. "Posho" or "Podsho" is the cry of the native porters when demanding food.

Poogamboo (Kin.), not determined. Moderate-sized tree, with the branches growing horizontally flat from the main stem. Leaves alternate, 3 by 2 inches, thin, closely and parallel-ribbed, downy on both surfaces, but more so underneath.

Reechop'wa (Keeao), *Hibiscus*, sp. Affords an elastic and silky rope from its fibre. The plant is cultivated in Unyoro. Specimen of rope from Unyoro in Kew seed-house.

Reeg'lah (Egypt), *Trianthema crystallina*. Nile bank, 19° N. lat. Unknown to all our followers, but recognized by Speke, who had seen it in the Somali country, where sheep fatten readily upon it. This ice-like plant grows flat upon the bare gravel desert, and glistens like green jewels. It has a single, long, tapering root, and a diminutive yellow-tinted flower; the leaves are oval, fleshy, and sparkling.

Reekōōssa (Kis.), *Urtica dioica*? N'yamboozee (Kis.): boozee = a goat. Grows on the border of Lake Windermere (alt. 4000 feet) with much luxuriance. Its long tapering root is a strong purgative. Saw this plant, as a fence, round a sacred spot, growing *seven* feet high.

Rehan (Kis.), a species of *Hyptis*, or the general name for the mint family. Sweet basil (Steere); mint (Kirk).

Semsem (—) (Krapf), *Sesamum indicum*. Mafoot'a, which see. Sown in ridges, grows 3½ feet high; a very healthy plant, suitable to the country; ripe in May.

Soonud or Soontd (Egypt), and Kurrut of Muscat, *Acacia arabica*. Used for boat-building at 12° N. lat., where, and at 10° N. lat., there are forests of it. The pods, some 8 inches long, are full of a brown crisp gum, which also exudes from wounds in the trunk; these pods are collected by the Nubians, who dye their cotton stuffs a dingy yellow with them. Some trees measured 8 and 12 feet in circumference when upon high and dry ground, and had a round, handsome outline of foliage; but those upon low islands never attain these dimensions, as their roots have no hold of the soil, and they get felled by strong winds. Its wood is said not to last long, although it is tough and cross in the grain.

Tanga-tanga (Kin.).

Tanga-wisi = ginger (Kirk).

Thatoora (Egypt), *Datura Stramonium*. Bushy herbaceous plant, at 28° N. lat., Nile bank. Long, tapering root and bell flowers. The captain of our diabeeah carried a quantity of these plants on board, and told us they are smoked in pipes for chest-complaint or spitting of blood. Another Nubian said that they were so used to cure delirium tremens, or nausea after a drunken bout.

Tocos'was (Kin.), *Hibiscus Sabdariffa*. Seeds eaten roasted and ground at Ugani, where it is cultivated. Wanyamezi eat the leaves.

Toong'gooj-ah (Kis.), ? *Solanum*. Shrub 6 to 8 feet high, covered with thorny, yellow fruit, showing distinctly five divisions; the calyx of these is cut off, and the rough-skinned fruit is stuck upon the finger like a thimble when there is a sore. Tungudsha of Krapf.

Uranga (Kis.), ? arrowroot. Saw a field of it in Usagara. Leaf, petiole, and bulb all eaten. Simba Uranga is a great swamp, with mangroves, in the island of Zanzibar (Steere). Uwanga = arrowroot (Krapf) = *Tacca pinnatifida* (Kirk), the starch from its root.

Veazee-koo, or Koobba (Kis.), *Dioscorea*, sp.,=the yam. It is grown upon heaps of earth, like our dung-heaps, in a field, or it may be trained up a pole, like the hop. The tuber grows as thick as the arm, of various shapes, when grown in the above manner.

Veetoongoolla (Keeao), *Dioscorea bulbifera*,=Matoo (Kin.). Its three-cornered fruit, when boiled, eats pleasantly (ripe Aug.), similar to boiled plantain. There is a bud-like process in the centre of each of its flat sides, and the plant propagates from one of these.

Wimumunia=Krapf's cereals and vegetables.

Yal'wah (Kin.), *Anchomanes Hookeri*?, Schott. Bulbous plant, 3 feet high, with curved-down thorns on the petiole and stem. The stem divides at its summit into three leaves, which are remarkably large, almost frond-like; the main rib is feathered with leaf. The bulb, 30 inches circ., is eaten as a vegetable. Found in a moist, shaded slope, not in flower, and the stem dying away in December.

Yoomboo (—), an excellent tuber, of the size and shape of the big toe, or larger, with thin purple skin. Ripe from May to July, and sweet-tasting when boiled. In general appearance the plant, when growing, recalled the mint, or one of the family.

Zeeb kælb (Arabic), *Aracea*. Purple-sheathed; found in flower, but without leaves, in November.

ENUMERATION OF SPECIES.

DICOTYLEDONES POLYPETALÆ. (By Professor OLIVER.)

RANUNCULACEÆ.

1. CLEMATIS CHRYSOCARPA, Welw.; Oliv. Fl. Trop. Afr. i. 5. Caule erecto, subsimplici; foliis sæpius 3-foliolatis, foliolo terminali lineari-oblongo v. obovato 3-lobato v. crenato-inciso, subtus sericeis tomentosisve; floribus majusculis terminalibus solitariis, sepalis 4–6 late oblongis v. ovatis sericeo-tomentosis, filamentis anthera longioribus, acheniis elongato-plumoso-caudatis.

Caulis 1–2-pedalis, simplex v. basi parce ramosus, ramis elongatis adscendentibus, sulcatus, tenuiter hispido-pilosus v. glabrescens. *Folia* radicalia desunt; caulina trifoliolata v. rarius unifoliolata, supra adpresse pilosa v. strigilloso-pilosa, subtus tomentosa v. sericea; foliolo terminali petiolulato, 1–2 poll. longo, obovato ovato v. ovali-oblongo, inciso-dentato v. trilobato, lobulis late crenato-incisis, lobulis dentibusve mucronulatis, foliolis lateralibus sessilibus minoribus obliquis; petiolus $\frac{1}{4}$–$\frac{1}{3}$ poll. longus, petiolulo folioli terminalis $\frac{1}{4}$–$\frac{1}{2}$ poll. longo. *Flores* $1\frac{1}{2}$–$4\frac{1}{2}$ poll. diametro, albi; pedunculi 1–6 poll. longi. *Sepala* 4–6, late oblonga v. ovato-elliptica subacuminata, dorso adpresse sericeo-pilosa, marginibus æstivatione inflexis latiusculis tomentosis, intus molliter piloso-tomentosis. *Stamina* indefinita; filamentis complanatis, linearibus, apicem versus attenuatis, ciliatis; anthera filamento breviore, lineari, mutica. *Achenia* tomentoso-pilosa, caudata, cauda recurva 1–2 poll. longa plumoso-pilosa.

Hab. $2\frac{1}{2}$° S. lat., common in waste ground, *Col. Grant!*

A broad-leaved form of the species, which occurs also in Angola. Specimens with narrow leaflets, however, we have from the Upper Nile, presented to the Kew Herbarium by Consul Petherick. It is a near ally of *Clematis trifida,* Hook. Ic. Pl. t. 79, a native of Madagascar.

Plate I. fig. 1. Stamens; fig. 2. Carpels.

2. CLEMATIS THUNBERGII, Steud.; Harv. Fl. Cap. i. 2; Thes. Cap. t. viii.; Oliv. Fl. Trop. Afr. i. 6.

Hab. Woods of Madi, 3° 15′ N. lat. (No. 564), and forest of Ukidi, *Col. Grant!* Widely spread in Africa, occurring in Senegambia, Angola, and at the Cape of Good Hope.

This is very nearly (perhaps too nearly) allied to *Clematis brachiata,* Thunb., another Cape species—the character which the late Dr. Harvey mainly relied upon as distinguishing them being the apiculate buds of our plant, those of *C. brachiata* being "very obtuse."

[Climbs up the trees in the Uganda and Ukidi forests by its petioles. The flowers are richly scented; and our men from Heeao state that its dried leaves and flowers are taken as snuff, to induce bleeding from the nose.—J. A. G.]

3. CLEMATIS GRATA, Wall. Pl. As. Rar. t. 98.—*C. inciso-dentata,* A. Rich. Fl. Abyss. i. 2. *C. Petersiana,* Klotzsch in Peters, Mossamb. Bot. 170. *C. viridiflora,* Bertol. Misc. Bot. xix. 7, t. iii.; Oliv. Fl. Trop. Afr. i. 7.

Hab. Forests of Uganda, 17 Aug. 1862, *Col. Grant!* Occurs also in Abyssinia, in Angola and on the Zambesi—extending eastward, by the Himalaya, to China.

[Climbs up the forest-trees; flowers in rich white clusters; used, like *C. Thunbergii,* in cases of headache.—J. A. G.]

[4. CLEMATIS, sp. Either *C. Stanleyi*, Hook., or *C. Kirkii*, Oliv. Stem erect, woody, and covered with white, crooked, soft down. Leaves dark green above, whiter beneath, and covered with down. The white flossy awns form a ball on the erect stem.—J. A. G.]

5. RANUNCULUS PINNATUS, Poir.; Oliv. Fl. Trop. Afr. i. 9. Radicibus fibrosis; caule erecto, ramoso; foliis pinnatipartitis, segmentis 3-fidis v. 3-partitis incisis pilosis; floribus luteis, sepalis reflexis; acheniis tenuiter tuberculatis.—*R. membranaceus*, Fresen. in Mus. Senck. ii. 207 (*ex descr.*). *R. striatus*, Hochst., A. Rich. Fl. Abyss. i. 8.

Caulis erectus, 1–3 ped. altus, rarius decumbens v. diffusus, striatus, pilis brevibus adscendentibus hirsutus v. glabratus. *Folia* radicalia et caulina inferiora longe petiolata, circumscriptione ovata, pinnati- v. bipinnatipartita, segmentis petiolulatis v. sessilibus ovatis v. ovato-lanceolatis acute incisis trilobatisve, piloso-hirsuta v. glabrata; folia caulina superiora sessilia v. subsessilia, 3- v. pinnatipartita, lobis angustioribus acute incisis. *Pedunculi* erecti, 1–3 poll. longi, teretes, adpresse hirsuti. *Flores* flavi. *Sepala* reflexa, dorso sæpius tenuiter pilosa. *Petala* obovato-rotundata, obtusissima, integerrima, striata. *Achenia* numerosa in capitulum ovoideo-globosum v. subglobosum aggregata, breviter apiculata, apiculo sæpius subuncinato, compressa, glabra, disco tuberculata rarius lævia, tuberculis sæpe paucis minutissimis.

Hab. By water, Marenga M'Khali, 6° 44′ S. lat., *Col. Grant!* Widely spread in Tropical and South Africa.

The relation of this plant to extra-African species can only be satisfactorily settled in a general review of the genus, which is much needed.

[This plant was only observed at an altitude of 3193 feet above the sea-level, upon the eastern side of the east-coast range of mountains, by some water which was clear as crystal.—J. A. G.]

Plate II. fig. 1. Flower; fig. 2. Petal with nectary; 3. Stamen; 4. Carpel from the flower; 5. Mature carpel.

ANONACEÆ.

1. ANONA SENEGALENSIS, Pers.; DC. Prod. i. 86; Oliv. Fl. Trop. Afr. i. 16; Deless. Ic. Sel. i. t. 86.—*A. arenaria*, Schum. et Thonn. Pl. Guin. 257.

Var. LATIFOLIA, Oliv. *l. c.*—Folia 6–7 poll. longa, 4–6 poll. lata.

Hab. Unyoro, 2° N. lat., and Madi, 3° N. lat., *Col. Grant!* Widely spread in Tropical Africa. Col. Grant's specimen is exceptional in the very large size of the leaves.

[Native name "m'tao-tao." Tree 10 feet high, trunk 12 inches in circumference. Bark of a silvery or plum-grey colour, very finely lined. Does not attain a greater size. Never found a well-blown flower. Common at 3° S. lat., and again at 2°–3° N. lat. Fruit a drupe, edible. The wood is straight, and makes good hoe-handles; also, at Madi, benches were made from its wood.—J. A. G.]

2. HEXALOBUS SENEGALENSIS, A. DC. Mém. Anon. 37; Oliv. Fl. Trop. Afr. i. 27.—*Uvaria monopetala*, Guill. et Perr. Fl. Seneg. 8, t. 2.

Hab. Rocky heights, Madi, Dec. 1862, *Col. Grant!* Occurs westward in Senegambia and Nigritania.

[Native name "m'kooa." Tree-trunk 5 feet in circumference. Bark peculiar, of a faded grey colour, and much fissured lengthwise; wood like red cedar; branches very close, and growing flatly. Its fruit, a one- to two-stoned drupe, red outside and inside, is used by the Wanyamezi for making their gums red. Seen at 3° S. lat. and at 3° N. lat., but not between these two latitudes.—J. A. G.]

MENISPERMACEÆ.

1. CHASMANTHERA DEPENDENS, Hochst. in Flora, 1844, 21; Oliv. Fl. Trop. Afr. i. 41.
Hab. Unyoro, Nov. 1862, *Col. Grant!*

Col. Grant's specimens are without either flower or fruit, but there can be little doubt of the identification. The same species is found in Abyssinia and Nigritania.

[Found climbing up the plantain trees in Uganda and Unyoro. Its leaves are remarkably thin. The root is large and thick, and a section of it is of a gamboge-yellow colour.—J. A. G.]

Nymphæaceæ.

1. Nymphæa stellata, Willd.; Oliv. Fl. Trop. Afr. i. 52; Bot. Mag. t. 552, 1189, 2058.—For extended African synonymy, *vide* Oliver, *l. c.*; for Indian distribution and synonymy, Hook. fil. & Thoms. Fl. Ind. i. 243.

Hab. Karagué lake, 4000 ft. alt., and Nile, 2° N. lat., *Col. Grant!* In rivers, lakes, and tanks throughout the Old-World tropics.

[Native name "maoongee-oongee." Found in all the lakes of Central Africa. The natives occasionally wear the flowers of this and *N. lotus* as wreaths to their woolly heads, or as girdles to their waists.—J. A. G.]

2. Nymphæa lotus, L.; Oliv. Fl. Trop. Afr. i. 52; Bot. Mag. t. 1280, 1364, 4665 (*N. devoniensis*).—*N. dentata*, Schum. et Thonn. Pl. Guin. 249. The synonymy is given at length in Hook. fil. et Thoms. Fl. Ind. i. 241.

Hab. Nile, 2° N. lat., *Col. Grant!* Widely distributed in the Old-World tropics.

[This species was gathered on the Nile at 2° N. lat., where the width of the river varies from 500 to 1000 yards. The flower stands up out of the water, and is double the size of the lilac-coloured *Nymphæa stellata*. I have no doubt the species is in all the African lakes.—J. A. G.]

Cruciferæ.

1. Morettia philæana, DC.; Oliv. Fl. Trop. Afr. i. 61; Delile, Fl. Ægypt. t. 33. fig. 3.

Hab. Belama desert, Nubia, *Col. Grant!* Leafless fruiting fragments only. A plant of the desert-regions of N. America and Arabia.

[Spheres formed of this plant, in a withered state, were found blowing over the desert and the plain of Belama at 22° N. lat., April 1863.—J. A. G.]

2. Senebiera nilotica, DC. Syst. Veg. ii. 527; Oliv. Fl. Trop. Afr. i. 70.—*Cotyliscus niloticus*, Desv. Journ. Bot. iii. 164, 175.—Glabra, diffusa; foliis radicalibus lineari-lanceolatis v. oblanceolatis, pinnatim partitis lobatis v. sinuatis, summis sæpe integris; siliculis compressis cordato-ovatis, apice integris (haud emarginatis), reticulato-rugulosis.

Herba glabra v. subglabra. *Caulis* 2–3-poll. ad 1–2-ped., sæpius a basi ramosus, ramis inferioribus elongatis prostratis v. decumbentibus teretiusculis. *Folia* radicalia 2–3 poll. longa, lineari- v. oblanceolata, obtusa, varie pinnatisecta v. nonnunquam sinuata v. subintegra; folia caulina breviora, oblonga, integra v. dentata. *Flores* minuti, pedicellati, in racemos breves elongatosve dispositi; racemis terminalibus v. in ramulis brevibus axillaribus, basi sæpe foliiferis, pedicellis gracilibus silicula 1–4-plo longioribus. *Silicula* $\frac{1}{16}$–$\frac{1}{12}$ poll. lata, apice integra; stigma subsessile.

Hab. Banks of Nile, 16–17° N. lat., *Col. Grant!* A common plant of the Nile region, hitherto unfigured.

[Nowhere met with till we reached 16½° N. lat., April 1863, where it is abundant on the right bank of the Nile and by the wells.—J. A. G.]

Plate III. fig. 1. Flower; fig. 2. Ovary and torus; fig. 3. Fruit, back view; fig. 4. The same, front view; fig. 5. Fruit, transverse section; fig. 6. Seed, with and without the testa.

[3. Sisymbrium, sp.? No. 446 of Speke's Appendix, with a drawing and description, without specimens. Flowers yellow. Pods round, linear, and many-seeded. Stem purple on one side. Leaves pinnatifid. 1° 42′ S. lat., Feb. 1862.—J. A. G.]

Capparideæ.

1. Cleome monophylla, L.; DC. Prod. i. 239; Oliv. Fl. Trop. Afr. i. 76.—*C. cordata*, Burch.; DC. *l. c.* *C. subcordata*, Steud. in Schimp. Pl. Abyss. Exs.—Hispidula; foliis simplicibus oblongo- v. lineari-lanceolatis subacutis, basi obtusis v. subcordatis, petiolatis; floribus racemosis, bracteis lanceolatis ovatisve, pedicellis sæpius æquilongis v. eisdem longioribus, staminibus 6; capsula elongato-cylindrica, striata, hispidula, gynophoro brevissimo v. subnullo; seminibus rugosis.

Herba erecta, ¾–2 ped. alta. *Caulis* striatus, hispidulus. *Folia* alterna, petiolata v. superiora subsessilia, oblongo- v. lineari-lanceolata, acutata v. obtusiuscula, basi rotundata v. subcaudata, summa interdum latiora ovata amplexicaulia, in bracteas sensim abeuntia, utrinque hispidula v. glabrata; lamina 1¼–2 poll. longa, ⅓–½ poll. lata; petiolus (foliorum caul. inferiorum) ½–1 poll. longus. *Racemi* erecti, bracteati, terminales, bracteis herbaceis lanceolatis v. ovatis. *Flores* pallide rosei v. albo-rubescentes. *Sepala* anguste linearia. *Petala* obovata, longe unguiculata, sepalis 2-plo longiora. *Capsula* brevissime stipitata v. subsessilis, 2½–3 poll. longa, $\frac{1}{12}$–$\frac{1}{10}$ poll. diametro, valvis longitudinaliter striatis, hispidulis. *Semina* globoso-reniformia, transverse plicato-rugulosa, inter rugas striis minutis longitudinaliter sub lente notata.

Hab. 5° 5′ S. lat., alt. 3900 ft., *Col. Grant!* Widely distributed in Tropical and Southern Africa.

Plate V. fig. 1. Flower; fig. 2. Stamens; fig. 3. Pistil; fig. 4. Seed, front and side views.

2. Cleome hirta, Oliv. Fl. Trop. Afr. i. 81.—*Decastemon hirtus*, Klotzsch in Peters, Mossamb. Bot. 155.—Herba erecta, pubescens v. hispidula; foliis 5–7-foliolatis, foliolis linearibus obtusiusculis; racemis foliaceis, bracteis 1–3–5-foliolatis; staminibus 10–12, inæqualibus; capsula cylindrica, striata, setulosa, breviter stipitata (seminibus *C. monophyllæ*).

Herba ¾–1½ ped., erecta. *Caulis* simplex vel ramulos axillares adscendentes basin versus emittens, hispidulus v. pubescenti-hirtus. *Folia* alterna, longe petiolata, 7–5-foliolata, foliolis linearibus v. anguste ovali-linearibus, plus minus obtusis, longioribus 1½–2½ poll. longis, $\frac{1}{12}$–$\frac{1}{6}$ poll. latis, parce hispidulis glabratisve; petiolus 1–2½ poll. longus. *Pedicelli* ⅓–½ poll. longi, sæpius adscendentes, hirti v. puberuli. *Flores* purpurei v. albi maculis flavis notati. *Sepala* linearia, acuta, glandulosa. *Petala* subæqualia oblanceolata obtusa, sepalis 1½–2-plo longiora. *Stamina* 10–12, rarius pauciora, inæqualia, longiora exserta; antheris oblongis v. linearibus. *Capsula* breviter stipitata, 2–2½ poll. longa, $\frac{1}{12}$–$\frac{1}{10}$ poll. diametro, valvis longitudinaliter striatis, minute glanduloso-setigeris.

Hab. 5° 1′ and 4° S. lat. Common in corn-fields, Mininga, *Col. Grant!* Also in Angola and in the Zambesi and Maravi country.

We have what may be the same species with elongated raceme and capsules, 4–5 in. long, from S. lat. 23°; but the specimen is imperfect.

Plate IV. fig. 1. Flower, side view; fig. 2. The same, front view; fig. 3. Seed.

3. Gynandropsis pentaphylla, DC. Prod. i. 238; Oliv. Fl. Trop. Afr. i. 82.—*G. denticulata*, DC. *l. c.* *Cleome acuta*, Schum. et Thonn. Pl. Guin. 293.

Hab. Karagué and Zungoméro, in corn-fields, *Col. Grant!* A common weed of the Old-World tropics.

[Met with everywhere near cultivations and habitations; a woody plant 4 feet long, with a hard, tapering, twisting root. The natives eat its leaves, when boiled, with red pepper and salt.—J. A. G.]

4. THYLACHIUM AFRICANUM, Lour.; DC. Prod. i. 254; Oliv. Fl. Trop. Afr. i. 82.—*T. ovalifolium*, Juss. in Ann. Mus. xii. 71. *T. querimbense* et *T. verrucosum*, Klotzsch in Peters, Mossamb. Bot. 163, 164.

Hab. M'géta River, 7° 20′ S. lat., *Col. Grant!* Confined to East Tropical Africa.

[A shrub, 4 to 7 feet high, common on rather dry, open ground, at 7°–8° S. lat. The calyx is burst open by the stamina, and then lies over attached like an extinguisher fastened to some lamps.—J. A. G.]

5. MÆRUA GRANTII, Oliv. Fl. Trop. Afr. i. 84. Glabra; foliis trifoliolatis v. superioribus unifoliolatis, foliolis anguste linearibus; floribus axillaribus, disco libero brevissimo annulari, petalis obovatis ellipticisve apiculatis, ovario subbiloculari, stigmate sessili.

Rami virgati, striati, glabri. *Folia* inferiora 3-foliolata, superiora sæpe 1-foliolata; foliolis anguste linearibus acuminatis, glabris, venulis inconspicuis, tenuiter coriaceis, $1\frac{1}{2}$–2 poll. longis, $\frac{1}{12}$–$\frac{1}{10}$ poll. latis, breviter petiolulatis. *Flores* axillares, solitarii v. pauci in apice ramulorum corymbosi. *Pedicelli* graciles, $\frac{1}{2}$–1 poll. longi. *Calyx* tubo cylindrico basi angustato, limbo 4-partito, lobis ellipticis apiculatis tubo longioribus. *Petala* obovata v. elliptica, unguiculata, calyce breviora, breviter apiculata. *Stamina* ∞. *Torus* tubo calycis æquilongus v. paullo longior. *Ovarium* ovoideum v. ellipsoideum, $\frac{1}{20}$–$\frac{1}{24}$ poll. longum, subbiloculare; ovulis circa 6 parietalibus; gynophoro gracili elongato, $\frac{1}{2}$–$\frac{3}{4}$ poll. longo.

Hab. Mohonyera, 6° 55′ S. lat., 38° 32′ E. long., *Col. Grant!*

Known only from Col. Grant's solitary specimen. The fruit has not been brought home.

6. MÆRUA OBLONGIFOLIA, A. Rich. Fl. Abyss. i. 32, t. 6; Oliv. Fl. Trop. Afr. i. 85.—*Niebuhria oblongifolia*, DC. Prod. i. 244. *Mærua angustifolia*, A. Rich. in Fl. Seneg. 29, t. 8.

Hab. Keedge country, 7° N. lat., Upper Nile, *Col. Grant!* Extends westward into Senegambia, and in India has a very near ally in *M. arenaria*, Hook. f. & Thoms. MSS. in Hb. Kew (*Niebuhria arenaria*, DC.; *Capparis heteroclita*, Roxb.).

7. COURBONIA DECUMBENS, A. Brongn. in Bull. Soc. Bot. Fr. vii. 901; Oliv. Fl. Trop. Afr. i. 88. *Physanthemum glaucum*, Klotzsch in Peters, Mossamb. Bot. 167, t. 29.

Hab. Madi, *Col. Grant!* Grows also in Abyssinia and on the Zambesi.

[A bush about the plains of Madi, Jan. 1863.—J. A. G.]

8. CADABA FARINOSA, Forsk.; DC. Prod. i. 244; Oliv. Fl. Trop. Afr. i. 90.—*Strœmia farinosa*, Vahl, Symb. i. 20. *Cadaba dubia*, DC. Prod. i. 244. *Streblocarpus Fenzlii*, Parlat. in Webb, Fragm. Fl. Æthiop. 24; Deless. Ic. Sel. iii. t. 8 (drawn with 6 stamens).

Hab. Madi, *Col. Grant!* Widely spread in North Tropical Africa, and eastward through Arabia to India.

[Native name "kana," a thornless shrub, with lead-coloured leaves, growing upon ant-houses about Madi; also at 3° S. lat. The natives eat its leaves boiled.—J. A. G.]

9. BOSCIA SALICIFOLIA, Oliv. Fl. Trop. Afr. i. 93. Foliis petiolatis, latiuscule elongato-linearibus acuminatis obtusisve, puberulis scabridis glabratisve; floribus apetalis racemosis, racemis axillaribus v. lapsu foliorum lateralibus v. in ramulis aphyllis brevibus paniculatis; staminibus 6–14; ovario ovoideo v. obpyriformi breviter stipitato, stylo brevi apiculato.

Frutex v. arbor parva. *Rami* teretes, pubescentes v. glabrati. *Folia* linearia v. anguste oblongo-linearia, sæpius acuminata v. interdum apice obtusissima, integra, primum puberula, deinde glabra v. subscabrida, coriacea, $2\frac{1}{2}$–5 poll. longa, 5–7 lin. lata, petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. *Racemi* $1\frac{1}{2}$–2 poll. longi; pedicelli

$\frac{1}{6}$–$\frac{1}{2}$ poll. longi, puberuli; bracteolæ minutæ caducissimæ. *Sepala* reflexa. *Discus* brevissimus, crassiusculus, fimbriatus. *Stamina* 6–14, filamentis filiformibus curvulis contortisve. *Ovarium* ovoideum apiculatum, glabrum, 1-loculare; ovula ∞, in placentis duabus; gynophoro $\frac{1}{24}$–$\frac{1}{8}$ poll. longo.

Hab. Madi, by water, *Col. Grant!*

We have what I have taken to be the same species from Dr. Kirk, collected on the Shiré River, Zambesia; but in Dr. Kirk's plant the pedicels are much shorter, not exceeding 1 or 2 lines, while in the Madi plant they are about $\frac{1}{2}$ in. in length. In the absence of fruit, however, I cannot separate these forms specifically.

[Native name "m'zazza." Moderate-sized tree, 3° N. lat., 4 Feb. 1863. The inflorescence is generally terminal. Only known to one of our men from 3° S. lat.—J. A. G.]

Plate VI. fig. 1. Flower; fig. 2. Stamens; fig. 3. Pistil and torus; fig. 4. Ovary, vertical section; fig. 5. The same, transverse section.

10. Capparis tomentosa, Lam.; DC. Prod. i. 246; Oliv. Fl. Trop. Afr. i. 96.—*C. puberula*, DC. *l. c.* 248. *C. polymorpha*, A. Rich. in Fl. Seneg. 24, t. 5. *C. persicæfolia*, A. Rich. Fl. Abyss. i. 31.

Var. *β*. Folia pubescentia; flores corymbosi.—Oliv. *l. c.*

Hab. Madi, *Col. Grant!* A variable species, with a wide distribution in Tropical Africa.

[Native name "kowangwee." Stem round, 1 inch in diameter, and crawling along the ground. Leaves glossy above, with a pair of recurved thorns by the base of the petiole. The natives at 3° S. lat. eat its leaves boiled during times of famine. Found on the plains of Madi, 3° N. lat., 25 Jan. 1863.—J. A. G.]

11. Cratæva religiosa, Forst.; DC. Prod. i. 243; Oliv. Fl. Trop. Afr. i. 99.—*C. Adansonii* and *C. læta*, DC. *l. c.* *C. guineensis*, Schum. et Thonn. Pl. Guin. 240.

Hab. Madi, *Col. Grant!* Common in North Tropical Africa. *C. Roxburghii*, R. Br., from India is probably the same species.

[Unknown to our men from Zanzibar, and only observed at 3° 15′ N. lat., where bushes of it were abundant. Tree-trunk 10 feet in circumference; bark grey, rough, but not fissured, thin, without gum, and smelling unpleasantly when cut. One bough was in flower and fruit with scarcely a leaf upon it, while another bough was densely covered with leaves and a few drooping fruit. The flower is very effective, the petals being large and white, and the long filaments a rich purple colour. Looking at the outside of the fruit, you would say it was two-celled. The tips of the branches are used by the natives to scrub their teeth; and the leaves are eaten boiled.—J. A. G.]

Violaceæ.

1. Ionidium enneaspermum, Vent. DC. Prod. i. 308; Oliv. Fl. Trop. Afr. i. 105. —*I. thesiifolium*, DC. Prod. i. 309, and var. *chenopodioides*, Guill. et Perr. Fl. Seneg. 35. *Viola guineensis*, Schum. et Thonn. Pl. Guin. 133. (? *V. lancifolia*, Schum. et Thonn. *l. c.*) *Ionidium rhabdospermum*, Hochst. (*fide* Webb).

Var. hirta, Oliv. *l. c.* (*I. hirtum*, Klotzsch in Peters, Mossamb. Bot. 148), foliis linearibus, acutis, hirtis.

Hab. Near Simbah, alt. 4000 ft., 5° 26′ S. lat., *Col. Grant!* A very variable plant, widely dispersed through the Old-World tropics.

Bixaceæ.

1. Cochlospermum niloticum, Oliv. Fl. Trop. Afr. i. 113. Foliis sub 3–5- palmatim

partitis, lobis divaricatis oblongis v. oblanceolatis obtusis, supra glabrescentibus, subtus puberulis; floribus subsolitariis v. in cymas paucifloras corymbiformes terminales dispositis.

Rami crassitie pennæ anserinæ, teretes, sublæves, glabrescentes, 1–1½ ped. longi, simplices v. ramosi. *Folia* alterna, profunde 3–5-fida, basi leviter cordata, lobis divaricatis oblongis v. obovato-oblongis obtusis vel late acutatis, minute denticulatis, supra glabrescentia, subcoriacea (in sp. nostro 1–1½ poll. longa, 2–2½ poll. lata); petiolus circa ½ poll. longa. *Flores* 2–3 poll. diam.; pedicelli ½–1 poll. longi, bracteolati, bracteolis parvis. *Sepala* subglabra, interiora majora, late elliptica v. obovato-elliptica, marginibus tenuibus. *Petala* sepalis 2–3-plo longiora. *Stamina* indefinita; filamenta filiformia, anthera lineari-lanceolata apicem versus poro introrsum dehiscente longiora. *Ovarium* dense hirtum.

Hab. Madi, *Col. Grant!*

Differs from the closely allied *C. tinctorium*, with which it agrees in the inflorescence and flowers, in the deeply divided leaves, with divaricate, not overlapping segments.

[Varies in size from 4 to 18 inches, and is more often found without leaves than with them. Growing upon bare forest ground, 3° 15′ N. lat., 10 Dec. 1862.—J. A. G.]

Plate VII. fig. 1. Stamen; fig. 2. Pistil; fig. 3. Ovary, transverse section.

2. ONCOBA STIPULATA, Oliv., sp. nov. Tomentosa; foliis late ellipticis v. obovato-ellipticis late acutatis, basi rotundatis, dentatis, utrinque hirto-tomentosis, stipulis conspicuis lineari-oblongis villosis, pedunculis axillaribus solitariis folio brevioribus, sepalis 3 extus villoso-tomentosis; petalis albis, 10–11.

Frutex, ramulis foliiferis tomentosis. *Folia* 2–3 poll. longa, 1⅓–1½ poll. lata; petiolus ¼ poll. *Stipulæ* petiolum subæquantes. *Pedunculi* tomentosi, subgraciles, 1 poll. longi.

Hab. Amongst granite rocks, alt. 4488 ft., 6° S. lat., 34° E. long. Shrub with snowy-white flowers.—*Col. Grant!* (*Grewia*, n. sp., No. 1. of Speke's Appendix.)

The specimens are too imperfect for complete analysis, and are therefore not figured. The species is allied to *O. tettensis*, Oliv., but is distinguishable at once by the conspicuous stipules.

3. FLACOURTIA ?, sp.

Hab. Madi, *Col. Grant!*

Leafy specimen only, without either flower or fruit. The leaves are broadly elliptical or ovate-elliptical, obtuse or broadly pointed, crenate-serrate, the base cordate or broadly rounded, entire, 3 to 4 in. long, on very stout petioles. I can only guess at the genus; it is cited as a doubtful *Flacourtia* in Speke's Appendix.

[Native name "m'seengeer'a," a low-growing slender-looking tree with straight thorns and leaves, like our hazel, of a soft dull-green colour. By water, 3° 15′ N. lat.—J. A. G.]

POLYGALEÆ.

1. POLYGALA PERSICARIÆFOLIA, DC. Prod. i. 326. Var. *angustifolia.* Annua; ramis hirtellis, foliis linearibus acutiusculis, marginibus anguste revolutis glabratis; floribus reflexis in racemos terminales v. fasciculos axillares subconfluentes dispositis, bracteis bracteolisque persistentibus; sepalis anterioribus liberis; alis ovato-rotundatis capsulam ellipticam, emarginatam excedentibus.

Herba 1–1½ ped., basi ramosa, ramis lateralibus adscendentibus hirtellis. *Folia* anguste lineari-ovalia, subacuta, basi angustata, marginibus revolutis, glabrata, 1½–2 poll. longa, ⅛–⅙ poll. lata. *Racemi* terminales folia vix excedentes vel flores in axillis foliorum superiorum fasciculati in racemum compositum foliaceum confluentes. *Bracteæ* minutæ, subulatæ. *Pedicelli* recurvi, calycem æquantes. *Sepala* anteriora libera et posteriora elliptica obtusa concava, posteriora paulo longiora, sepala interiora (alæ) multo

majora persistentia, obovato- v. rotundato-elliptica, venulis divergentibus. *Petala* lateralia carina cristata breviora, margine interiore obscure lobata. *Capsula* emarginata, ciliolata. *Semina* hirta.

Hab. Unyoro, *Col. Grant!*

A curious form of the species, which in the 'Flora of Tropical Africa' I included under *P. arenaria*, Willd., but, I think, incorrectly. It is connected with the usual state of *P. persicariæfolia*, DC., which was gathered by Col. Grant in Unyoro, common on cultivated ground, by a specimen brought home by the same gentleman from Ukidi, in which the leaves are more nearly linear and the racemes supplemented by small fascicles of flowers in the upper axils, in this respect approaching *P. hypericoides*, Webb, Frag. Fl. Æthiop. 31, which I have reduced to *P. persicariæfolia*. I doubt if the true *P. arenaria* has been found in Eastern Africa. For the synonymy of *P. persicariæfolia*, DC., see Fl. Trop. Afr. i. 129.

[In moist places, and by cultivation, on the plateaux at 2°–3° N. lat. This species includes the *Polygalæ* nos. 1 and 2 of Speke's Appendix.—J. A. G.]

Plate VIII. fig. 1. Flower; fig. 2. The same, laid open; fig. 3. Petals and stamens; fig. 4. Staminal sheath; fig. 5. Pistil; fig. 6. Fruit with the persistent calyx; fig. 7. Capsule; fig. 8. Seed.

2. Polygala acicularis, Oliv. Fl. Trop. Afr. i. 132. Fruticosa, glabra, stricta, rigida; foliis acicularibus; racemis terminalibus, bracteis caducis; sepalis anterioribus connatis, alis deciduis obovato-oblongis; capsula elliptica emarginata, seminibus pilosis, strophiolatis.

Frutex strictus, glaber; rami crassitie pennæ cygni, ramulis fastigiatis rigidis foliosis. *Folia* acicularia mucronata, sæpe fasciculata, ¾–1½ poll. longa. *Racemi* terminales, breves, folia sæpius paullo excedentes, rachide compressa cicatricibus dentiformibus florum delapsorum notata. *Bracteæ* minutæ, rigidæ, acutæ, caducissimæ. *Pedicelli* brevissimi sepalis exterioribus breviores. *Sepala* anteriora connata, posteriora elliptica persistentia, lateralia (alæ) cæteris 3–4-plo longiora, elliptica, obtusa, cum petalis decidua. *Carina* dorso cristata. *Stamina* 8 monadelpha, 2 centralia ananthera, filamentis pilosis. *Capsula* compressa, elliptica, bidentata v. emarginata, ¼ poll. longa. *Semina* sericeo-pilosa, strophiolo cordato albo coronata.

Hab. Bare ground, Madi, *Col. Grant!*

A very remarkable plant, of which but one specimen, a very good one, was brought home. We have specimens of the same, or a close ally, sent home by Mr. Barter from Nigritania.

Plate IX. fig. 1. Leaves; fig. 2. Flower; fig. 3. The same laid open; fig. 4. Petals and stamens; fig. 5. Staminal sheath; fig. 6. Pistil; fig. 7. Stigmatic lobe; fig. 8. Fruit; fig. 9. Seeds.

Caryophylleæ.

1. Polycarpæa corymbosa, Lam.; DC. Prod. ii. 374; Oliv. Fl. Trop. Afr. i. 145.—*P. eriantha*, Hochst., A. Rich. Fl. Abyss. i. 303. *P. fallax* and *P. humifusa*, J. Gay, MS. in Hb. Kew.

Var. effusa, cymis confluentibus.—Oliv. *l. c.*

Hab. Madi, on the rocky ground, *Col. Grant!* Widely distributed in Tropical Africa, and generally through hot countries of both hemispheres.

Portulaceæ.

1. Portulaca oleracea, Linn.; DC. Prod. iii. 353; Oliv. Fl. Trop. Afr. i. 148. Common Purslane.

Hab. Unyoro, *Col. Grant!* Common in warm countries round the globe.

[This plant is eaten as a vegetable. The natives apply its leaves as poultices. The leaves are heated and placed upon the sore, with the leaf of the castor-oil plant covering them. This application draws the sore.—J. A. G.]

2. Portulaca quadrifida, Linn., is enumerated in Speke's Appendix as observed by Col. Grant; but I have seen no specimen gathered by him.

3. Talinum cuneifolium, Willd.; DC. Prod. iii. 357; Oliv. Fl. Trop. Afr. i. 150.

Hab. Unyoro, *Col. Grant!* Grows also in Abyssinia, Senegambia, Angola, and Zambesia. Nearly allied to the Indian *T. indicum*, W. & A.

[Found on ground which had been cleared of forest for cultivation, growing by the root of a tree, Unyoro.—J. A. G.]

Tamariscineæ.

1. Tamarix gallica, L.; DC. Prod. iii. 96; Oliv. Fl. Trop. Afr. i. 151.—*T. indica*, Willd.; DC. *l. c.* *T. senegalensis*, DC. *l. c.* *T. nilotica*, Ehrenb. in Linnæa, ii. 269.

Hab. Banks of the Nile, 15° to 16° N. lat., *Col. Grant!* Occurs through N. Africa westward to the Atlantic islands, round the Mediterranean and eastward to India.

[This tree was not observed anywhere between 8° S. lat. and 15¾° N. lat., but is abundant on both the banks of the Nile at 15° to 16° N. lat.—J. A. G.]

Elatineæ.

1. Bergia suffruticosa, Fenzl in Denkschr. Bot. Gesell. Regensburg, iii. 183; Oliv. Fl. Trop. Afr. i. 153.—*Lancretia suffruticosa*, Delile, Fl. d'Egypte, Atlas, t. 25.

Hab. By the Nile, 16° N. lat., *Col. Grant!* Occurs westward to Senegambia and through Egypt to Western India.

[A bushy woody plant, 18 or more inches in height. Similar in its mode of branching to the yew tree.—J. A. G.]

Dipterocarpeæ.

1. Lophira alata, Banks in Gaertn. Fruct. iii. 32, t. 188; Guill. et Perr. Fl. Seneg. t. 24; Oliv. Fl. Trop. Afr. i. 174.—*L. simplex*, Don, Gen. Syst. i. 814.

Hab. Madi woods, plentiful, *Col. Grant!* Previously known only from West Tropical Africa.

[Native name "mee-enzerrah." The handsomest tree, as regards shape, foliage, and flowering, seen upon our route. Trunk 6 feet in circumference; bark ordinary grey; chips cut from it are of a carmine-red colour, and it exudes a sticky colourless gum; foliage thick. The largest leaves were 2 feet long and 6 inches across, with close parallel ribs and waving edges, similar to some seaweed. The young leaves come to light of a dull red colour. The inflorescence, at first erect, soon droops from the weight of the snow-white, richly perfumed flowers. During December the tree was in full flower, and the ground under it was white with fallen petals. In the vicinity of the parent tree there were many of its young trees, indicating that the seeds had wings to carry them there. Observed only at 3° 15′ N. lat.: one of our men had seen it at 9° S. lat., and said the people there, after killing a buffalo, take its blood with some of their own, mix them upon the leaf of this tree and that of the *m'peera* (of the fig tribe). The mixture is put for luck into cuts made between the eyebrows and above and below the elbows.—J. A. G.]

Malvaceæ.

1. Sida Schimperiana, Hochst.; A. Rich. Fl. Abyss. i. 66; Mast. in Fl. Trop. Afr. i. 180.—*Dictyocarpus truncatus*, Wight in Madras Journ. v. (Ann. Sc. Nat. ser. 2. xi. 169).

Hab. Hills, Karagué, *Col. Grant!* Also Abyssinian and Indian.

[Woody hardy dwarfed shrub, Karagué hills, alt. 4500 feet. Calyx greenish, corolla yellow; leaves in tufts; grows one foot high, rather decumbent.—J. A. G.]

2. SIDA SPINOSA, L.; DC. Prod. i. 460; Mast. in Fl. Trop. Afr. i. 180.—*S. alba* and *S. alnifolia*, L. Sp. Pl. 960.

Hab. Unyoro, *Col. Grant!* A common tropical weed.

[A creeper or crawler, growing in dense vegetations by the gardens of Unyoro.—J. A. G.]

3. SIDA CORDIFOLIA, L.; DC. Prod. i. 461; Mast. in Fl. Trop. Afr. i. 181.—*S. althæifolia*, Sw.; Guill. et Perr. Fl. Seneg. 73. *S. africana*, P. de Beauv. Fl. Owar. ii. 87. *S. decagyna*, Schum. et Thonn. 307.

Hab. Unyoro, abundant, *Col. Grant!* Generally dispersed through the tropics.

4. SIDA RHOMBIFOLIA, L.; DC. Prod. i. 462; Mast. in Fl. Trop. Afr. i. 181.—*S. riparia*, Hochst. Pl. Schimp. Abyss. exs. *S. ostryæfolia*, Webb, Fragm. Fl. Æthiop. 49.

Hab. Unyoro plateau and Karagué, *Col. Grant!* Occurs throughout the tropics.

[Found near huts at Karagué and upon the plateaux of Unyoro. Flowers white; they close with the sun.—J. A. G.]

5. ABUTILON GLAUCUM, Webb in Hook. Fl. Nigrit. 109; Mast. in Fl. Trop. Afr. i. 185. —*Sida glauca*, Cav. Icon. i. 8, tab. 11. *Abutilon asiaticum*, Guill. et Perr. Fl. Seneg. i. 67 (non Linn.). *Sida mutica*, Delile, Fl. d'Egypte, 60. no. 45. *Abutilon muticum*, Webb, Frag. Fl. Æthiop. 51. *Sida pannosa*, R. Br. in Salt, Abyss. App. 65, an Forst.? *Abutilon pannosum*, Webb, *l. c.*

Hab. Khartoum, fields, *Col. Grant!* Widely spread in the Old-World tropics.

[Found about the fields of Khartoum at the junction of the Blue and White Niles.—J. A. G.]

6. ABUTILON INDICUM, Don, Gen. Syst. i. 504; Mast. in Fl. Trop. Afr. i. 186.—*Sida indica*, DC. Prod. i. 471. *S. grandiflora*, Don, Gen. Syst. i. 504.

Hab. M'bwiga, *Col. Grant!* Common in the tropics.

[Woody plant, common about corn-fields at 6°–7° S. lat., also at 25° S. lat. (Delagoa Bay). Flowers yellow.—J. A. G.]

7. URENA LOBATA, L.; DC. Prod. i. 441; Mast. Fl. Trop. Afr. i. 187.—*U. americana*, L. *U. diversifolia*, Schum. et Thonn. Pl. Guin. 308. *U. virgata* and *U. obtusata*, Guill. et Perr. Fl. Seneg. i. 48. *U. tricuspis*, Cav. Diss. vi. 334. *U. sinuata*, L.; DC. Prod. i. 442.

Hab. Unyoro, *Col. Grant!* Common throughout the tropics.

[Native name "milenda." Erect woody plant, scantily branched and 6 feet high. The bark of the branches is coloured above and green beneath; it is very tough, and made into ropes. Stem rough; corolla rose-pink colour and sticky; the petals close with the sun; pistil-tip is divided into, say, ten raying parts; seed-vessels adhere to clothes by the curved hooks upon them; seeds in shape like the fifth of an orange, rough and of a dull brown colour. Upon the back and at the base of the midrib of each kind of leaf there is a gland with a slit in its centre, from which water oozes. Unyoro.—J. A. G.]

8. PAVONIA MACROPHYLLA, E. Mey.; Harv. et Sond. Fl. Cap. i. 169; Mast. in Fl. Trop. Afr. i. 190.—*Urena mollis*, R. Br. in Salt, Abyss. App. 65. *P.* (*Lebretonia*) *crenata*, Hochst. Pl. Schimp. Abyss. exs. *Lebretonia acuminata*, A. Rich. Fl. Abyss. i. 53, tab. 13.

Hab. Plantain-groves, Uganda, July, *Col. Grant!* Occurs also in South Tropical and Extratropical Africa.

9. Pavonia hirsuta, Guill. et Perr. Fl. Seneg. 51; Mast. in Fl. Trop. Afr. i. 191.—*P. insignis*, Fenzl in Pl. Kotschy., et in Webb, Frag. Fl. Æthiop. 42. Suffruticosa, adscendens v. procumbens, hirto-tomentosa; foliis rotundatis, cordatis, sæpius late subtrilobatis, inæqualiter dentatis, supra scabrido-hirtis, subtus tomentosis; floribus axillaribus pedunculatis v. in racemos terminales foliiferos dispositis; bracteolis involucri circa 12 lineari-subulatis, calycem 5-fidum subæquantibus; coccis lignosis dorso rugosis, setulosis, apice breviter cornutis.

Caulis suffrutescens ad 2½–5 ped. altus, basi ramosus; ramis decumbentibus v. adscendentibus hirto-tomentosis. *Folia* rotundata v. cordiformia, 1–2½ poll. longa, 1–4 poll. lata, sæpius obscure v. subtrilobata, lobulis latis v. rotundatis, inæqualiter dentatis, utrinque hirsuto-tomentosa v. supra scabrido-hirta; petiolus fol. superiorum 1–2 poll. longus. *Pedunculi* ½–1 poll. longi. *Bracteolæ* involucri calyce nonnunquam breviores. *Calyx* hirtus v. hirsuto-tomentosus, 5-fidus, lobis deltoideo-ovatis, acutis. *Petala* flava, basi rubro v. purpureo maculata, calyce 3–4-plo longiora. *Fructus* subglobosus calyce brevior, rugosus, setulosus v. hispidulus, setulis recurvis, apice breviter 5-cornutus, centro depressus. *Semina* lævia.

Hab. Nile land, *Kotschy,* also *Col. Grant* (Masters). No specimen of Col. Grant's now in the collection.

Plate X. (*Hibiscus*) fig. 1. Involucel, calyx, and pistil; fig. 2. Fruit.

10. Pavonia Schimperiana, Hochst. in A. Rich. Fl. Abyss. i. 52; Mast. in Fl. Trop. Afr. i. 192. Herbacea, perennis, erecta v. suffruticosa; foliis palmatim 5–7-fidis, lobis acutatis, inæqualiter dentatis; floribus axillaribus fasciculatis v. in racemos interruptos erectos terminales dispositis, breviter pedunculatis v. subsessilibus; bracteolis involucri 10–15, linearibus, calycem campanulatum 5-fidum sæpe excedentibus; coccis 3-aristatis, aristis retrorsum setosis.

Caulis subsimplex v. ramis axillaribus adscendentibus, 3–4 ped. altus, glabratus, puberulus v. hirsutus. *Folia* 2–4 poll. longa atque lata, 5–7-fida, lobis deltoideis v. oblongo-lanceolatis, acutis, varie dentatis, glabrata v. utrinque villoso-hispida; petiolus foliorum inferiorum 1–4 poll. longus, fol. superiorum brevior. *Flores* 1½–2 poll. diam. in axillis solitarii v. fasciculati, breviter pedunculati, superiores sæpe in racemum terminalem simplicem v. compositum bracteato v. foliaceum dispositi. *Epicalyx* bracteolis 10–15 linearibus herbaceis glabratis, hirtis v. hirsutissimis, calycem subæquantibus v. excedentibus. *Calyx* campanulatus late 5-fidus, lobis deltoideis acutis, trinerviis. *Petala* calyce 3–5-plo longiora. *Carpella* fructifera calycem subæquantia, apice hirsuta v. glabrata, 3-aristata v. 3-cornuta, appendiculis setis retrorsis obsitis.

Var. foliis subtus breviter tomentoso-pubescentibus.

Hab. Karagué, *Col. Grant!* Also in Abyssinia and the Chiradzura Mountains, near lake Shirwa, Zambesia.

The densely hirsute and glabrous forms, at first sight, look specifically distinct; the carpellary appendices also of the former are shorter than in the latter.

[Common about the cultivated plots of ground at Karagué. In flower and fruit, March.—J. A. G.]

Plate XI. fig. 1. Involucel, calyx, and pistil; fig. 2. Fruit.

11. Hibiscus physaloides, Guill. et Perr. Fl. Seneg. 52; Mast. in Fl. Trop. Afr. i. 200. —*H. heterotrichus*, E. Mey. Hb. Drège. *H. adscendens*, Don, Gen. Syst. i. 482. *H. variabilis*, Garcke in Peters, Mossamb. Bot. 126. *H. ribesiæfolius*, Guill. et Perr. Fl. Seneg. i. 53. *H. cæsius*, Garcke, *l. c.*?

Hab. Open ground, Madi: fruit, December, *Col. Grant!*

12. HIBISCUS ARTICULATUS, Hochst. in A. Rich. Fl. Abyss. i. 66; Mast. in Fl. Trop. Afr. i. 200. Erectus v. decumbens, ramosus, sparse scabride pilosus; foliis heteromorphis palmatim 3–5-fidis v. oblongo-lanceolatis indivisis, obtuse serratis integrisve, stipulis linearibus; floribus flavis axillaribus solitariis pedunculatis; bracteolis involucri 7–10 lineari-subulatis, setoso-pilosis, calyce 5-fido brevioribus; lobis calycinis lanceolatis, acutis; "capsula oblongo-ovoidea, breviter apiculata, valvorum marginibus ciliatis; seminibus lævibus."

Herba perennis v. biennis, erecta v. diffusa. *Rami* basi lignescentes, teretes, sparse setoso-pilosi. *Folia* caulina alterna petiolata, profunde 3-fida, lobo centrali lateralibus longiore vel lobis lateralibus lobatis 5-fida v. indivisa, oblonga v. lanceolata, obtusa v. late acutata, serrato-dentata v. subintegra, glabrata v. utrinque plus minus setoso-pilosa v. scabrida, $1\frac{3}{4}$–3 poll. longa; petiolus $\frac{1}{4}$–1 poll. longus. *Stipulæ* lineares, integræ v. dentatæ, herbaceæ, subpersistentes, erectæ, $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Pedunculi* solitarii, axillares, $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longi, apicem versus subgeniculatim articulati, setoso-pilosi v. glabrati. *Involucrum* bracteolis 7–10 linearibus v. subulatis, setigeris, $\frac{1}{6}$–$\frac{1}{4}$ poll. longis. *Calyx* 5-fidus (puberulus vel) setoso-hirtus, involucello longior, lobis (ovato-lanceolatis vel) lanceolatis acutis. *Corolla* calyce 2-plo (3-plo?) longior.

Hab. Unyoro, *Col. Grant!*

Col. Grant's specimen, which is not sufficient for a full description, differs a little from Schimper's Abyssinian plant, the bracketed characters above applying to the latter. I follow Dr. Masters, however, in his identification.

[Gathered on the high bank of the river Kuffo in Unyoro, September.—J. A. G.]

Plate XIII. figs. 1 & 2. Two forms of the plant as to foliage; fig. 3. Flower after removal of the petals and stamens; fig. 4. Fruit; fig. 5. The same, transverse section; fig. 6. Seed.

13. HIBISCUS PANDURIFORMIS, Burm.; DC. Prod. i. 455; Mast. in Fl. Trop. Afr. i. 203. —*H. tubulosus*, Cav. Diss. 161, tab. 88. fig. 22. *H. multistipulatus*, Garcke in Bot. Zeit. 1849, 849. *H. senegalensis*, Guill. et Perr. Fl. Seneg. i. 53.

Hab. Unyoro, *Col. Grant!* Common in the Old-World tropics.

[Six feet high, rather bushy; the whole plant is covered with a stellate pubescence, which stings the fingers for an instant. Lower leaves vine-leaf form, and six by six inches. Outer calyx of eight segments delicate green colour; corolla bright yellow, with a red eye. Bark very strong, pulls off the whole length of the plant. Seed-vessel an elongated sphere, covered with hair, and many-seeded; the corolla, as well as the calyx, adheres to it; pistil-tip composed of five velvety balls.—J. A. G.]

14. HIBISCUS GRANTII, Mast. in Fl. Trop. Afr. i. 203. Suffrutescens: caule erecto hirsuto; foliis ovato- v. obovato-ellipticis rotundatisve, sæpius apicem versus subtrilobatis, acutatis, dentatis, hirsutis v. hirsuto-tomentosis; stipulis anguste linearibus, petiolis æquilongis; floribus glomeratis paniculatis; bracteolis involucri lineari-subulatis, circa 12, calyce 5-fido paullo brevioribus; capsula calycem subæquante subglobosa, sub-5-lobata, mutica, hirto-tomentosa, valvis 5, marginibus leviter recurvis; seminibus glabris.

Caulis ramosus, teres, hirsutus. *Folia* $1\frac{1}{2}$–3 poll. longa, 1–$2\frac{1}{2}$ poll. lata, 5-nervia; petiolus fol. superiorum $\frac{1}{12}$–$\frac{1}{2}$ poll. longus. *Flores* in apice ramulorum congesti, bracteati. *Calyx* campanulatus hirsuto-tomentosus, 5-fidus, lobis ovatis subacutis, involucellum superans. *Petala* calyce 3–4-plo longiora. *Columna* staminea exserta. *Styli* 5.

Hab Moist rocky localities in Ukidi, Ugani, and Madi, *Col. Grant!*

[Found growing on rocky soil in Ugani and Madi. Seed-vessel 5-celled, single-seeded; seeds kidney-

shape, brown, rough, finely striated. Collected December 4, 1862. Flowers pink or flesh-colour, very pretty. In flower and fruit November and December.—J. A. G.]

Plate XII. fig. 1. Involucel and calyx; fig. 2. Fruit; fig. 3. Seed; fig. 4. The same, enlarged.

15. HIBISCUS SABDARIFFA, L.; DC. Prod. i. 453; Mast. in Fl. Trop. Afr. i. 204.

Hab. Unyoro, *Col. Grant!* Much cultivated in the tropics.

[Native name "tocos-was." Bushy woody plant, 3 feet high, cultivated in Unyoro, where its seeds are roasted, ground into meal, and eaten mixed with water. Leaves generally insect-eaten, with hairs upon both sides. Outer calyx of 9 or 10 equal fleshy green segments; inner calyx of 5 equal pale yellow segments, with 2 ribs. Petals yellow. At 2° S. lat. the natives eat it as spinach. The bark is made into beautiful rope, but the fibre is short.—J. A. G.]

16. HIBISCUS CANNABINUS, L.; DC. Prod. i. 450; Mast. in Fl. Trop. Afr. i. 204.

Hab. Mininga, *Col. Grant!* Cultivated extensively in warmer regions of the Old World.

[Common about corn-fields at Mininga, 4° 18′ lat. In seed and flower in April.—J. A. G.]

17. HIBISCUS GOSSYPINUS, Thunb.; DC. Prod. i. 453; Mast. in Fl. Trop. Afr. i. 205. *Var.* Suffrutex, stellatim setoso-hirtus; ramis subvirgatis; foliis ovatis, obtusis, serrulato-dentatis, utrinque pilis brevibus stellatis tomentoso-hirtis; stipulis subulatis, petiolo æquilongis; floribus axillaribus, solitariis v. in racemos foliosos terminales subcongestis; involucri bracteolis 8–12 subulatis hirtis, calyce hirsuto acute 5-fido brevioribus; corolla calyce 2-plo longiore; capsula ellipsoideo-globosa, obtusa, calycem 2-plo superante, valvulis hirtellis; seminibus gossypinis.

Rami elongati, teretes, pilis stellatis brevibus scabride hirti. *Folia* ovata, obtusa, serrulato-denticulata, utrinque stellatim hirta, $\frac{3}{4}$–1 poll. longa, $\frac{1}{2}$–$\frac{5}{8}$ poll. lata; petiolus $\frac{1}{6}$ poll. longus. *Stipulæ* subulatæ, petiolo subæquilongæ v. breviores. *Pedunculi* $\frac{1}{2}$–1 poll. longi, hirti. *Involucrum* bracteolis lineari-subulatis rigidiusculis hirtis, calyce brevius. *Calyx* hirsutus, profunde 5-fidus, lobis lanceolatis, acutis. *Corolla* rosea, calyce 2-plo longior; petala obovato-elliptica. *Capsula* obovoideo- v. ellipsoideo-globosa, obtusa, 5-valvis, valvis ellipticis hirtiusculis glabratisve, $\frac{1}{3}$–$\frac{1}{2}$ poll. longis.

Hab. Karagué, Dec. 1862 (No. 215 of App. Speke's Journ. p. 627, as *H. crassinervis*, Hochst.), *Col. Grant!*

[A woody plant, 1 to 4 feet high, with a bare stalk, growing in the valleys and, sometimes, on the hills of Karagué. Stem round, all covered with *white* rough stellate pubescence; lower stem bare, grey, and rough. Corolla pink; seeds black, irregular in shape, and covered with long down.—J. A. G.]

This plant, although regarded by Dr. Masters as *A. gossypinus* (and, in technical characters, no doubt correctly so), yet approaches *H. crassinervis* very nearly, and differs in several minor characters from the true *H. gossypinus*, which was also collected by Col. Grant on grassy slopes in Karagué (No. 162 of App. to Speke's Journ. 627), and to which the following note applies.

[A woody plant, stems round, covered with *brown* straight hairs. Leaves numerous upon the stem and n tufts; corolla and staminal column white. Seed-vessel less than a nutmeg, and same shape. In flower November. On the grassy hill-slopes of Karagué.—J. A. G.]

Plate XIV. fig. 1. Flower after the removal of the petals and stamens; fig. 2. Fruit; fig. 3. Seed; fig. 4. The same, enlarged.

18. HIBISCUS ESCULENTUS, L.; DC. Prod. i. 450; Mast. in Fl. Trop. Afr. i. 207.—*Abelmoschus esculentus*, Wight et Arn. Prod. Fl. Pen. Ind. Or. i. 53. *A. Bammia*, Webb, Fragm. Fl. Æthiop. 48.

Hab. Unyoro, 2° N. lat., *Col. Grant!* Throughout the tropics.

[Known by the natives as "bameea." Sometimes a single stem is ten feet high.—J. A. G.]

19. Gossypium barbadense, Linn.; DC. Prod. i. 456; Mast. in Fl. Trop. Afr. i. 210.—*G. punctatum*, Schum. et Thonn. Pl. Guin. 310. *G. vitifolium*, Lam. Dict. ii. 135. *G. peruvianum*, DC. Prod. *l. c.*

Hab. 7° 27′ S. lat., 37° 30′ E. long., *Col. Grant!* Cultivated throughout the tropics.

[A 10 to 14 feet high bush, with wide-spreading branches. In flower October at 7½° S. lat.; seen at 2° S. and at 3° N., but nowhere under the equator. The natives at 2° S. make from it a heavy, coarse, black-edged sheet; and at 3° N. the people cultivate a few bushes to yield material for stringing beads and for making long tassels, which the females wear in front and behind their persons.—J. A. G.]

20. Adansonia digitata, Linn.; DC. Prod. i. 478; Mast. in Fl. Trop. Afr. i. 212.

Hab. 7° S. lat. and 2° N. lat., *Col. Grant!* No specimen preserved. Widely distributed in Tropical Africa; occurring again in India. The Baobab or Monkey Bread-tree.

[Native names "m'pāla" and "m'booyoo." Trunk measured 54 feet in circumference. Commenced to branch at 8 feet from the ground. Boughs stumpy; wood useless. A pleasant drink is made by mashing its seeds in water. At Ugogo the people were seen collecting basketsful of seeds for this purpose. The seed-vessel is extensively used in draining water from wells &c. Its bark is made into good strong rope and into long fringes, worn like the Highland kilt. Early in October, at 7° S. lat., it was bare and not in leaf; on the 16th November, at 6½° S. lat., at 2700 feet, it was in flower. Calyx of five segments (thick), green outside and white velvety within; corolla longer than calyx, is white, and smells strongly. Parasitical plants were seen upon this species. Pitched camp under it at Ugogo and at Unyoro.—J. A. G.]

21. Eriodendron anfractuosum, DC. Prod. i. 479; Mast. in Fl. Trop. Afr. i. 214.—*Bombax pentandrum*, Linn. Sp. Pl. 959. *B. guineense*, Schum. et Thonn. Pl. Guin. 302.

Hab. 7° 27′ S. lat., and again 2° N. lat., *Col. Grant!* No specimen preserved in Col. Grant's collection. The same species occurs both in Upper and Lower Guinea and the East and West Indies.

[Native name "meesoofee." Tree with green bark; several trunks sometimes grow from one root; thorns or excrescences upon the bark. In flower October at 7° 27′ S. lat.; met with at 2° N. lat. —J. A. G.]

Sterculiaceæ.

1. Sterculia cinerea, A. Rich. Fl. Abyss. i. 74, tab. 16; Mast. in Fl. Trop. Afr. i. 218.

Hab. Madi and Bari, *Col. Grant!* Grows elsewhere in the Nile region and Abyssinia, and again in Upper Guinea. This includes the *S. tomentosa* of the Appendix to Capt. Speke's Journal, 627.

[Native name "m'loolooma." Tree 10 feet in circumference; not in leaf, but in flower in February, and seed-vessels upon the tree. Calyx green outside, streaked pink inside. The seeds are imbedded in bristles, which stick to the fingers. Seeds have a brittle skin upon them of a blacklead-colour and a yellow aril; an ice-coloured gum, drawing out to the finest thread, comes away from the seed-stalk. The seeds are eaten during famines by the people; and the strips of bark from young trees are used as rope. Plentiful 3° to 4° N. lat., also at 5° S. lat.—J. A. G.]

2. Dombeya multiflora, Planch. in Flore des Serres, vol. vi. 225, tab. 605; Mast. in

Fl. Trop. Afr. i. 227.—*Xeropetalum multiflorum*, Endl. Nov. Stirp. Dec. 36. *X. minus*, Endl. *l. c.* 37. *Dombeya senegalensis*, Planch. *l. c.* (? *Xeropetalum quinquesetum*, Delile, Voy. à Méroé, 85.)

Hab. Woods, Madi, *Col. Grant!* A variable plant in respect of the size of the flowers and their pubescence. Occurs in other parts of the Nile basin, in Senegambia, and Zambesia.

[Native name "keenga." A young tree, with light-coloured bark, in full blossom, but not in leaf, January: Madi woods. Single leaves were 5 by 4 or 6 by 5 inches, and had a rough surface. Calyx green; petals pink-white, and shaped like a fly's wing—namely, longer on one side than the other; pistils 4, or more often 3, from the summit of a flattened hairy sphere. The natives said the fruit was not edible, but of a dark colour, and the size of a grain of Indian corn. The wood is tough, and is made into excellent bows.—J. A. G.]

3. Dombeya Mastersii, Hook. fil. Bot. Mag. 5639; Mast. in Fl. Trop. Afr. i. 228.

Hab. High banks of Nile, Chopeh, 2° N. lat., *Col. Grant!* Grows also in Abyssinia and Nigritania.

[Shrub with rich clusters of white flowers in November, upon the Nile banks 100 feet above the river at Chopeh, 2° N. lat.—J. A. G.]

4. Dombeya reticulata, Mast. in Fl. Trop. Afr. i. 228. Ramulis glabratis; foliis ovato-cordatis, obscure lobulatis, sinuatis v. crenato-dentatis, late acutatis v. obtusiusculis, utrinque pilis brevibus stellatis scabridis, nervis venulisque subtus prominentibus; paniculis cymosis axillaribus pedunculatis multifloris folio longioribus, pedunculis glabris; pedicellis brevibus, cum calyce stellatim tomentosis; sepalis ovato-lanceolatis.

Rami glabri v. glabrescentes. *Folia* majora 6–9 poll. longa, 6–8 poll. lata, basi profunde cordata; minora (tempore florifero) 2–2½ poll. longa; petiolus glaber, 3 poll. longus. *Pedunculi* in axillis foliorum superiorum solitarii, erecti, glabri, supra medium 2–3-chotome ramosi. *Pedicelli* flore breviores v. subæquilongi, stellatim tomentosi. *Bracteolæ* lineares, 1–1½ lin. longæ, deciduæ.

Hab. 3° N. lat., *Col. Grant!*

I have not dissected a flower. They are in bud only in the only specimen.

Plate XV. fig. 1. Flower laid open, the petals removed; fig. 2. Pistil; fig. 3. Ovary, transverse section.

5. Melhania ferruginea, A. Rich. Fl. Abyss. i. 76; Mast. in Fl. Trop. Afr. i. 231. Frutex ramosus; ramulis dense tomentosis; foliis petiolatis, ovato-oblongis (v. ellipticis), basi subcordatis, dentato-serratis, utrinque velutino-tomentosis; pedunculis axillaribus solitariis petiolum superantibus 1–2–3-floris; involucro trifoliolato, foliolis late ovatis, tomentosis, calyci subæquilongis; calycis lobis ovato-lanceolatis, acutis; capsula subglobosa, hirsuta, calycem æquante; seminibus obtuse angulatis, tuberculatis rugulosisve.

Frutex 3-pedalis, ramulis obtuse angulatis, dense cinnamomeo-tomentosis. *Folia* alterna petiolata, ovato-oblonga v. elliptica, obtusa, dentato-serrata, utrinque velutino-tomentosa, 2–3½ poll. longa, $1\frac{1}{3}$–$1\frac{3}{4}$ poll. lata; petiolus $\frac{1}{3}$–1 poll. longus, dense tomentosus. *Pedunculi* $\frac{3}{4}$–3 poll. longi, erecti, tomentosi, 1–3-flori; pedicelli $\frac{1}{4}$–$\frac{1}{3}$ poll. longi. *Involucrum* bracteolis 3 late ovatis, acutis, calyce brevioribus v. æquilongis, tomentosis. *Sepala* lanceolata v. ovato-lanceolata, hirsuto-tomentosa. *Capsula* subglobosa, hirsuta, polysperma. *Semina* ovoideo-angulata, tuberculata.

Hab. Madi, Dec. 1862, *Col. Grant!* This is the No. 729 of App. to Speke's Journ. 628 (under the name of *Melhania Forbesii*, Pl.). Occurs also in Abyssinia.

[A woody plant, 3 feet high, bare stem, almost past flowering in December. Flowers generally four upon a stalk; corolla yellow, deciduous; or rather it sticks upon the crown of the seed-vessel like a cap or extinguisher. The leaves are like the softest green velvet in texture, white underneath and thick. The whole plant is covered with a yellow mouldy hair. Found in the bare high fields of Madi, December 1862.—J. A. G.]

Plate XVI. fig. 1. Flower, the calyx and front petals removed; fig. 2. Pistil; fig. 3. Fruit, with the persistent involucre and calyx, and crowned by the withered remains of the corolla; fig. 4. Fruit; fig. 5. The same, transverse section; fig. 6. Seed.

Tiliaceæ.

1. Grewia occidentalis, Linn.; DC. Prod. i. 511; Mast. in Fl. Trop. Afr. i. 246.

Hab. Karagué, *Col. Grant!* Also south of the tropic.

[Shrub near watercourses of Karagué hills; in flower December. Bark rough with hairs, and speckled with white spots. Leaves have a smooth surface, but are rough underneath; Calyx purple inside; fine delicate, purplish petals, each with a claw inside, one-third of the way from their base. Berry yellow, pea-size, smooth surface, dry within, with a hard stone; pistil longer than the stamina.—J. A. G.]

2. Grewia mollis, Juss.; DC. Prod. i. 510; Mast. in Fl. Trop. Afr. i. 248. Arbor vel frutex; ramis glabris, glaucescentibus, internodiis leviter compressiusculis; foliis oblongo-lanceolatis, acutis, denticulatis, supra obsolete scabridis, subtus breviter albido-tomentosis, breviter petiolatis; pedunculis axillaribus, petiolo longioribus v. æquilongis, 1–5-floris; pedicellis tomentosis, calyci subæquilongis; sepalis ovali-oblongis, extus tomentosis; fructus lobulis globosis.

Ramuli virgati, glabri, glaucescentes, leviter complanati. *Folia* petiolata, disticha, oblongo- v. ovali-lanceolata, acuta, denticulata, basi oblique rotundata, triplinervia, supra scabrida v. glabrata, subtus albido-tomentosa, 3–4 poll. longa, 1–$\frac{1}{2}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{3}$ poll. longus, hirtus v. tomentosus. *Stipulæ* lineari-lanceolatæ, petiolum subæquantes, caducæ. *Pedunculi* axillares, sæpius fasciculati, pilis stellatis tomentosi v. hirti, $\frac{1}{6}$–$\frac{3}{4}$ poll. longi; pedicelli $\frac{1}{6}$–$\frac{1}{3}$ poll. longi. *Flores* $\frac{1}{2}$ poll. diam., flavi. *Sepala* ovali-oblonga, acuta, $\frac{1}{3}$ poll. longa, intus glabra. *Petala* oblonga v. oblanceolata, sepalis breviora, basi leviter incrassata. *Torus* brevissimus, hirsutus. *Filamenta* filiformia, glabra. *Ovarium* hirsutum; stylus glaber, stigma capitatum.

Hab. 3° S. lat., February 1863, *Col. Grant!*

Col. Grant's specimen is in flower only. The ovary in the flowers which I have dissected I find 1-celled with few (2–5) laterally affixed ovules. The globose fruits (in West-African specimens identified by Dr. Masters) are 2- to 5-celled, with a bony endocarp; and Dr. Masters found 2 cells in the ovary he dissected from Col. Grant's specimen.

[Native name "m'koma." Grows to a circumference of 12 feet, with straight branches. The ribs of the leaves are rather coloured. The calyx is green outside and yellowish inside; corolla yellow. Fruit the size of a pea, sometimes two and three are stuck together, edible and pleasant to taste, light-coloured. The wood is made into very good bows, also into arrows, by the natives. The outer wood is yellow; and the heart is dark, resembling our rosewood.—J. A. G.]

Plate XVII. fig. 1. Flower; figs. 2 & 3. Petal, back and front view; fig. 4. Pistil and receptacle; fig. 5. Ovary, longitudinal section; fig. 6. The same, transverse section (all taken from the flowering specimen); fig. 7. Fruit, and fig. 8. Transverse section of the same, both taken from the fruiting specimen figured, collected by Barter in Nigritania: this fruit is 3- to 5-celled, tending to separate when mature into as many pyrenes.

3. Triumfetta semitriloba, Linn.; DC. Prod. i. 507; Mast. in Fl. Trop. Afr. i. 256.

—*T. angulata*, Lam. Dict. iii. 421; *T. cordifolia*, Guill. et Perr. Fl. Seneg. i. 92, t. 18. *T. longiseta*, Guill. et Perr. *l. c.*

Hab. Unyoro, *Col. Grant!* Widely spread in the tropics.

[Flowers yellow, minute. In flower in November, in plantain-groves at Unyoro.—J. A. G.]

4. TRIUMFETTA ANNUA, Linn.; DC. Prod. i. 507; Mast. in Fl. Trop. Afr. i. 256.—*T. Schimperi*, Hochst. in Schimp. hb. Abyss.

Hab. Unyoro, *Col. Grant!* Also from Abyssinia and Angola.

[Plant growing in cultivated ground, clammy to the touch. Stem round and rough with hairs. Flowers and seeds in October. Calyx green; corolla yellow and shorter than calyx. Leaves much eaten away. Seeds round, the size of peas, with hooks all over them, which adhere even to the hand.—J. A. G.]

5. TRIUMFETTA RHOMBOIDEA, Jacq.; DC. Prod. i. 507; Mast. in Fl. Trop. Afr. i. 257 (where an extended synonymy is given).

Hab. Near Kazé, 5° S. lat., *Col. Grant!* A common plant in the Old-World tropics, and very variable in size, habit, and indumentum.

[Common everywhere. Collected at 5° S. lat.: flowers in March.—J. A. G.]

6. CORCHORUS TRILOCULARIS, Linn.; DC. Prod. i. 504; Mast. in Fl. Trop. Afr. i. 262. —*C. fruticulosus*, Visiani (ex Walp. Rep. i. 354). *C. serræfolius*, DC. Prod. i. 504. *C. triflorus*, Bojer (ex Walp. Rep. v. 117).

Hab. Common in fields, Unyoro, *Col. Grant!* Also south of the equator, both in Eastern and Western Africa.

[Stem round, pink surface. In August the yellow flowers were out, but they were too small to examine without a good lens. Pod slightly curved, perfectly hexagonal, 3-celled, and with three tips. The numerous seeds exactly resemble broken bits of lead from a lead-pencil, and are about the sixteenth of an inch in length. Common in fields of Unyoro. Uses not known.—J. A. G.]

7. CORCHORUS ANTICHORUS, Ræuschel, Nomen. Bot. ed. 3, 158; Mast. in Fl. Trop. Afr. i. 263.—*Antichorus depressus*, Linn.; DC. Prod. i. 504. *Corchorus microphyllus*, Fresen. in Mus. Senck. ii. 156.

Hab. Banks of Nile, 16° N. lat., *Col. Grant!* A characteristic plant of the desert region, extending from Cape Verde (and its islands) eastward through Northern Africa and Arabia to Scinde.

[Grows flatly on the ground, in or by cotton-fields, on right bank of the Nile about 16° lat. Fruits here in April.—J. A. G.]

[8. CORCHORUS, sp., Speke's Appendix, 628, from a drawing; no specimen preserved. A foot high. Each leaf has one hair ¼ inch long on either side at its base. Stem tough, smooth, pink, and shining. The leaves are made into a stringy spinach. Common at 1° to 2° N. lat.—J. A. G.]

ZYGOPHYLLEÆ.

1. TRIBULUS TERRESTRIS, Linn.; DC. Prod. i. 703; Oliv. Fl. Trop. Afr. i. 283.—*T. albus*, Poir.; DC. *l. c.* *T. humifusus*, Schum. et Thonn. Pl. Guin. 215. *T. Kotschyanus*, Boiss. Diagn. ser. 2, i. 111. *T. mollis*, Ehrenb. in Schweinf. Fl. Æthiop. 29. *T. excrucians*, Wawr. et Peyr. Sert. Beng. 17.

Hab. 7° 27′ S. lat., *Col. Grant!* A common and very variable tropical weed.

[Common everywhere. Reddish stem, covered with stiff hairs; corolla yellow. Flowers in October at 7° to 8° S. lat.—J. A. G.]

2. FAGONIA CRETICA, Linn.; DC. Prod. i. 704; Oliv. Fl. Trop. Afr. i. 287 (where extended synonymy and abstract of principal varieties are given).

Hab. Shingle desert behind Berber, 17½° N. lat., *Col. Grant!* Widely distributed in the dry regions of Northern and Southern Africa, Asia, and in Western America.

In Col. Grant's specimens the extremities and 1(–3?)-foliate oval-oblong mucronate leaves are granular-scabrid, and the spines slender, divergent, exceeding the leaves.

[Flowers of a rose-pink colour in April at 17½° N. lat.—J. A. G.]

GERANIACEÆ.

1. OXALIS CORNICULATA, Linn.; DC. Prod. i. 692; Oliv. Fl. Trop. Afr. i. 296.—*O. radicosa*, A. Rich. Fl. Abyss. i. 123.

Hab. Common near cultivation, Usui, *Col. Grant!* A weed of cultivation nearly everywhere in warm countries.

O. procumbens, Steud., A. Rich. Fl. Abyss. i. 123, which, in the Fl. Trop. Afr. *l. c.*, I reduced as a small-leaved form of *O. corniculata*, should certainly have been maintained specifically distinct, as indicated by A. Rich. *l. c.*

2. OXALIS (§ BIOPHYTUM) SENSITIVA, Linn.; DC. Prod. i. 690; Oliv. Fl. Trop. Afr. i. 297.—*Biophytum Petersianum*, Klotzsch in Peters, Mossamb. Bot. 81, tab. 15.

Hab. 5° 5′ S. lat., alt. 3900 ft., and Unyoro, *Col. Grant!* Widely spread both in Tropical Africa and Asia.

[Sensitive-leaved weed, 4 to 10 inches high, growing in light soil. Stem of a purple-red colour. Flowers, bright yellow, in March at 5° S. lat.—J. A. G.]

RUTACEÆ (AURANTIEÆ).

1. CITRUS AURANTIUM, L. Cultivated by the Arabs at Unyanyembé, 5° S. lat., *Col. Grant!*

[Native name "m'dimoo." One planted by an Arab at Kazeh was in fruit in February; it had only been planted two years.—J. A. G.]

SIMARUBEÆ.

1. HARRISONIA ABYSSINICA, Oliv. Fl. Trop. Afr. i. 311. Frutex, ramulis pubescentibus; foliolis 3–4-jugis, ovalibus v. obovato-ellipticis, remote crenato-denticulatis; petiolo communi subtus pilosulo; spinulis stipularibus brevibus recurvis; cymis paucifloris; ovario 5-lobato.

Frutex. Ramuli teretes, crassitie pennæ gallinaceæ, lenticellati, novelli pubescentes v. puberuli. *Folia* alterna, imparipinnata, 2–3-pollicaria; petiolo communi articulato inter foliolorum paria alato, subtus pubescente; foliolis ellipticis v. obovato-ellipticis, obtusis, remotiuscule crenato-dentatis glabratis v. subtus in nervo medio pubescentibus, sessilibus, ½–⅘ poll. longis. *Spinæ* stipulares, e basi latiuscula, breves, recurvæ. *Flores* in cymas corymbosas ramulos terminantes v. interdum in paniculas racemosas confluentes dispositi, ½–⅓ poll. diam.; pedunculo puberulo, pedicello ⅙–¼ poll. longo; bracteolis minutis. *Calyx* parvus, 5-partitus; lobis ovatis, obtusis, extus pubescentibus. *Petala* 5, elliptica, æstivatione subvalvata, extus puberula. *Stamina* 10, filamento antice squamulæ obovatæ pilosæ adnato, anthera majuscula oblongo-elliptica, obtusiuscula. *Ovarium* 5-lobum, 5-loculare, disco insertum; styli breves, connati; stigma 5-denticulatum; ovula solitaria. *Drupa* carnosa, 3–5-pyrena.

Hab. Woods, Madi, *Col. Grant!* Also at Zanzibar.

[Native name "m'ceenango." Shrub: trunk about 15 inches in circumference; branches boughing. The principal leaf-rib is winged, leaves very tender. Calyx yellowish green, minute, quarter the size of the corolla, which is pinkish or more yellow. Below each branch-axil there is a pair of flat, grey, crooked-down thorns at right angles to each other upon the stem, their length the eighth of an inch or longer. Its thorns tear one's clothes while going through the woods. In flower at 3° N. lat. in December.—J. A. G.]

Plate XVIII. fig. 1. Bud; fig. 2. Flower laid open; fig. 3. Stamens with the adnate scale; fig. 4. Pistil; fig. 5. Young fruit.

2. BALANITES ÆGYPTIACA, Delile; DC. Prod. i. 708; Delile, Fl. d'Egypte, Atlas, tab. 28. fig. 1; Oliv. Fl. Trop. Afr. i. 315.

Hab. Madi, *Col. Grant!* Occurs also in Abyssinia and westward to Nigritania.

A singular variety (or distinct species?) with elliptical terete fruit about 1 in. long, the endocarp thin and crustaceous, was collected by Dr. Welwitsch in Angola.

[Native name "m'choonchoo." Tree: trunk 6 feet in circumference; branches rather weeping; bark black, closely and longitudinally striated; spines (January, at Madi) green with yellow tips; leaves a livid green and their surfaces glossy; inflorescence not always in the leaf-axils but above them: calyx green, corolla yellowish green; both hang slightly. Fruit filbert-size, but not angular; when this plum is sucked it tastes like an intensely bitter date. Natives of Madi eat it and extract oil from it by roasting; the oil is mixed with red clay and used as an unguent for the body. At 9° to 10° S. lat. the bark of young trees yields a very strong fibre of white colour.—J. A. G.]

OCHNACEÆ.

1. OCHNA MACROCALYX, Oliv. Fl. Trop. Afr. i. 319. Suffruticosa, glabra; foliis oblanceolato-ovalibus, acutiusculis, serrulatis, subsessilibus; floribus majusculis in racemos brevissimos, paucifloros, axillares dispositis; pedicellis prope basin articulatis, calyce longioribus, gracilibus; sepalis obtusis, subuncialibus, petalis rotundatis, unguiculatis brevioribus; antheris poro subapicali dehiscentibus; stylis fere ad apicem coalitis; stigmatibus capitellatis.

Rami rectiusculi, ½–2 ped. longi, e caudice lignoso depresso, solitarii v. fasciculati, penultimi pedunculis persistentibus interrupti, subteretes, glabri. *Folia* alterna, ovali-oblanceolata, acuta v. subacuta, basi obtusiuscula, serrulata, glabra, reticulato-venosa, sessilia v. brevissime petiolata, 3–3½ poll. longa, ¾–1 poll. lata. *Stipulæ* parvæ, squamiformes, caducæ. *Pedunculi* axillares et subterminales, ¼–1 poll. longi v. obsoleti, 2–5–7-flori; pedicelli ¾–1½ poll. longi, graciles, glabri, prope basin articulati. *Sepala* ovato-elliptica, obtusa, subcoriacea, rosea v. sanguineo-rubra, persistentia, accrescentia, demum ¾–1 poll. longa. *Petala* lamina rotundata, unguiculata, sepalis longiora. *Stamina* circ. 40; anthera filamento æquilonga, linearis, poris subapicalibus dehiscens. *Stylus* elongatus, apice 5-fidus, stigmatibus capitellatis.

Hab. Lat. 6° 56′ S., alt. 1700 ft., Nov. 1860, *Col. Grant!* Also in Zambesi-land.

[A hardy plant, the root deep in the dry, hard soil. The petals were off in November, and the calyx was a handsome blood-red colour. Found on the east-coast range of hills at 6° 56′ S. lat.—J. A. G.]

Plate XIX. fig. 1. Pistil and receptacle; figs. 2 & 3. Stamen, back and front view, the anthers dehiscent by terminal pores.

2. OCHNA, sp. A single specimen with leaf and fruit only, not certainly identified, Kazi, 1860.

[Six inches high, growing in patches in thin forest. Calyx, of a specimen in fruit, is of a rich pink colour. Root long, of uniform thickness, and deeply fixed in the ground.—J. A. G.]

3. Ochna, sp.? A leafy branch without flowers or fruit, from Madi. Speke's Appendix, 628.

[An ordinary-sized tree. Madi woods, Dec. 1862.—J. A. G.]

Burseraceæ.

1. Boswellia, sp.? A single pinnate leaf 15–18 in. long, with about 18 alternate oblong-lanceolate, rather obtuse, sinuous, coriaceous leaflets 4–6 in. long.

Hab. Madi, *Col. Grant!*

[Native name "looban," or Frankincense. Tree. Madi, 3rd January, 1863, not in flower or fruit. Leaf, gum, and bark preserved. A number of these young trees grew in an open space, as if this locality had been that of the parent tree. Each tree was about 5 feet high, and its trunk 15 inches in circumference at base; therefore the tree tapered rapidly to its extremity. They bent easily, but were tough to break. The bark was rent into black, hard, irregular pieces; and an incision of the inner bark showed it to be of a red carmine colour and without smell. Its gum is a rich, clear amber, tastes sweet, and dissolves in the mouth. It is glassy-like, and comes from wounds made by insects in the trunk. Leaves grow alternately upon the tree; their surface shines; and underneath they are of a dull green colour; edges wave very much, and are irregularly toothed; the leaf is hard and dry to the feel, and has a pleasant smell when rubbed. Unknown to most of our men.—J. A. G.]

2. Balsamodendron africanum, Arn. in Ann. Nat. Hist. iii. (1839) 87.—*Heudelotia africana*, A. Rich. in Fl. Seneg. i. 150, t. 39. *B. Schimperi* and *B. Kotschyi*, Berg. in Bot. Zeit. 1862, 162.

Var. abyssinica, Oliv. Fl. Trop. Afr. i. 325.—*B. abyssinicum*, Berg. *l. c.* 161. *B. Kafal*, Kth.? hb. Schimp. no. 1359. *B. Kafat*, A. Rich. Fl. Abyss. i. 149.

Hab. Ugani, *Col. Grant!* Also in Abyssinia and the Mozambique region, *Dr. Kirk.*

[This shrubby tree (native names "m'gazoo" and "katatee") has the appearance of our Blackthorn, but is more stunted-looking. Bark smooth, of the colour of our plum-trees, but, near the ground, it is rougher and cracked into small shapeless parts. On scraping the inner bark a colourless juice appears; and from under the bark a milky-white sticky juice exudes, scentless, and seems soluble. The older spines are sunk into the bark and grow horizontally with the leaf-branch. The branches end in a sharp point. The leaves are very glossy on their surface. The small fruits, in April, were the colour of a greengage, but speckled over. The tree is used as a fence at 3° N. lat.—J. A. G.]

Meliaceæ.

1. Trichilia emetica, Vahl; DC. Prod. i. 622; Oliv. Fl. Trop. Afr. i. 335. Arborea; ramulis ultimis pubescentibus; foliis imparipinnatis, 5–7–11-foliolatis; foliolis oblongo-ellipticis v. oblanceolatis, obtusissimis, basi rotundatis, subtus pubescentibus; paniculis axillaribus, folio brevioribus; sepalis rotundatis, tubo stamineo profunde 10-fido; filamentis apice bifidis, ovario 3-loculari; ovulis geminatis; capsula subglobosa, breviter stipitata.

Arbor, ramulis ultimis crassiusculis, primum pubescentibus, deinde glabrescentibus, teretibus. *Folia* alterna, imparipinnata, 5–11-foliolata, exstipulata; foliola oblongo-elliptica v. obovato- v. oblanceolato-oblonga, obtusissima v. retusa, basi rotundata, supra glabrata, subtus pubescentia, sessilia v. breviter petiolulata, costa venisque lateralibus utrinque 10–15, subtus prominentibus; foliola superiora sæpius majora, 2½–6 poll. longa, 1–2½ poll. lata; petioluli 0 v. 1–2 lin. longi; petiolus communis 2½–7 poll. longus, pubescens. *Paniculæ* pluriflorae, subsessiles v. pedunculati, folio breviores, pubescentes. *Pedicelli* brevissimi. *Calyx* 5-sepalus, tomentosus, sepalis rotundatis. *Petala* calyce 2–3-plo longiora, imbricata, dorso velutino-tomentosa. *Filamenta* fere ad medium coalita, intus supra hirta, apice bifida. *Antheræ*

ovali-oblongæ. *Ovarium* hirtum, 3-loculare, in stylum pilosulum angustatum; ovula geminata; stigma capitatum. *Capsula* subglobosa v. clavato-globosa, breviter tomentosa, stipitata, 3-valvis, valvis coriaceis, 1 poll. diam., stipite $\frac{1}{10}$–$\frac{1}{8}$ poll. *Semina* oblonga, aristata, arillo coccineo.

Hab. Madi, flower in Jan. 1863, *Col. Grant!* Widely spread in Tropical Africa. We have excellent specimens collected by Dr. Kirk in the Zambesi.

The oil and tallow obtained from the seeds is used by the natives in cookery. A figure of it is given by Bertoloni in his 'Miscellanea Botanica,' ix. tab. 2, under the name of *Mafureira oleifera*. *Mafuta*, Dr. Kirk says, is a name meaning *fat*, and is "applied to many different oil-seeds."

[Tree 8 feet in circumference of trunk. Bark black, much fissured into two-inch oblongs; bark of branches grey, but neither smooth nor rough, not gummy but watery. In flower and leaf end of January at 3° to 5° N. lat.; seeds not then developed. Leaves 9-foliolate, drooping, have a soft taste, and downy beneath. Ribs very parallel and prominent behind. Calyx green; corolla nearly three times the length of the calyx, yellowish; the extremity of the petals is thickened, and they hang down, exposing the column of stamens. Pistil same length as stamina, and seemingly divided into three at its tip. Unknown to all our men except one, who used its bark in a case of syphilis. The natives obtain from this tree a liquid which they use as a sauce.—J. A. G.]

Plate XX. fig. 1. Flower; fig. 2. Section through the staminal column, showing the pistil; fig. 3. Upper free portion of a filament with the anther, back view; fig. 4. The same, front view.

2. Khaya senegalensis, A. Juss. Mém. Mél. 98, t. 10; Guill. et Perr. Fl. Seneg. 130, t. 32; Oliv. Fl. Trop. Afr. i. 338.—*Swietenia senegalensis*, Desr. in Lam. Dict. iii. 679.

Hab. Madi, Feb. 1863, *Col. Grant!* Also in Senegambia, and the same, or a near ally, we have from Zambesi-land (Manganja hills).

[Tree: trunk 10 feet in circumference; bark has grey scales, is thick and soft; no smell from an incision. Gum exudes from wounds; it sticks to the teeth, is tasteless, smelless, shiny, fractured, and the colour of pale amber. In flower and fruit February at 4° N. lat. Fruit a hard thick capsule, the size of a small orange, separates into four regular segments, exposing numerous brown curved scales of seeds, which are packed on end, one on the top of the other. This tree differs from the following (*Soymida?* sp.) in its fruit, its leaves, and its gum.—J. A. G.]

3. Soymida ? sp. A single leaf only.

Hab. Madi, *Col. Grant!*

Dr. Schweinfurth, in 'Reliquiæ Kotschyanæ,' 37, describes a *Soymida? roupalifolia*, adding that Col. Grant's plant, enumerated in the Appendix to Speke's Journal, may perhaps be the same plant. This, however, cannot be, as the form of the leaflets &c. described by Schweinfurth does not accord with ours. The leaf has all the appearance of that of a *Soymida*; the leaflets are subopposite and broadly elliptical. I omitted all reference to it in 'Flora of Tropical Africa.'

[Native name "m'bawa." Huge tree. Bark grey, not scaling, not fissured. At 4 feet from the ground its circumference was 15 feet. It branched at 20 feet from the ground, but the trunk continued to taper upwards for 30 feet. Leaves 6 to 10-foliolate; leaflets $5\frac{1}{2}$ by 3 inches, ovate. In fruit at 4° N. lat. in December. Each fruit is of the size and has the look of a large pomegranate, only that the five divisions of the fruit are apparent on its surface. Its stalk shows no part of the calyx. The five cells contain many flat winged seeds, which are white and packed together like cards; size $1\frac{1}{2} \times 1$ inch, including the wing. Gum accumulates, precisely like the runnings from a tallow candle, upon the trunk. It shines, is transparent, of a wax colour, smells disagreeably (as also does the inside of the seed-vessel), seems insoluble in the mouth, and burns like a bit of wood. The natives tell me that immense canoes are made from the trunk of this tree at Lake Nyassa, in 13° S. lat.—J. A. G.]

OLACINEÆ.

1. XIMENIA AMERICANA, Linn.; DC. Prod. i. 533; Oliv. Fl. Trop. Afr. i. 346.—*X. laurina*, Delile in Ann. Sc. Nat. sér. 2, xx. 88.

Hab. Madi woods, *Col. Grant!* Widely distributed in the tropics of both hemispheres. Further synonymy is given by Mr. Bentham (Fl. Austral. i. 391).

[Native names "m'peenjee" and "m'toondwah." Shrubby tree, looking, from its shape and branching, like a wild plum-tree. Trunk 16 inches in circumference. Bark finely striated, pale colour; branch-bark green. Thorns grow upwards. Leaves the same dull colour upon both sides. Flowers single, double, or treble, from amongst the leaves. The drupe is shiny when ripe, of a red colour, and rather acid to the taste. Natives smear their bodies with oil extracted from its kernels; the kernel is toasted, pounded, and boiled for this purpose. Found at 5° S., 2° and 4° N. lat.—J. A. G.]

2. OPILIA AMENTACEA, Roxb. Pl. Corom. ii. 31, t. 158; Oliv. Fl. Trop. Afr. i. 352.—*Groutia celtidifolia*, Guill. et Perr. Fl. Seneg. 101, t. 22. *Opilia celtidifolia*, Endl. in Walp. Rep. i. 377. *O. javanica*, Miquel, Fl. Ind. Bat. i. 784.

Hab. Madi, *Col. Grant!* Wide-spread in the Old-World tropics.

[Found in flower at 4° N. lat. in January. None of our men from more Southern Africa knew this tree. It grew near water.—J. A. G.]

CELASTRINEÆ.

1. CELASTRUS SENEGALENSIS, Lam.; DC. Prod. ii. 8; Oliv. Fl. Trop. Afr. i. 361.—*C. montanus*, Roxb. Fl. Ind. i. 620. *C. phyllacanthus*, L'Hérit. Sert. 6. no. 28. *C. decolor*, Delile, Voy. à Méroé, 100, tab. 64. fig. 6. *C. coriaceus*, Guill. et Perr. Fl. Seneg. i. 142. *C.* (*Catha*, p. 725) *europæus*, Boiss. Voy. en Espagne, 127, tab. 38. *C. obovatus*, Hochst. in Schimp. hb. Abyss. *C. glaucus*, R. Br. in Salt, Abyss. App. 64. *Catha decolor* and *C. senegalensis*, Webb, Frag. Fl. Æthiop. 60, 61.

Hab. Madi woods, *Col. Grant!* Occurs from West Tropical Africa eastward to India. A very variable species in respect of the form and size of the leaves, presence or absence of spines, &c. In Col. Grant's plant the extremities are unarmed or with short slender spines: leaves broadly elliptical or obovate, obtuse or apiculate, 2–2½ inches long, on petioles ⅙–½ inch, drying a pale ashen green.

[Small tree, often met with, but rarely in fruit or flower. The leaves are of a vivid green colour upon both sides, without gloss; their edges are sharp; when rubbed they smell like fresh hay or sorrel. The upper parts of the stem and the petioles are pink. Spines in the axils of the leaves are pink; but later, when below each branch, they become of a brown-grey colour. Calyx green; corolla white. Women make use of a decoction from its root to relieve them of pains at childbirth.—J. A. G.]

2. ELÆODENDRON ÆTHIOPICUM, Oliv. Fl. Trop. Afr. i. 365. *Var.* Ramulis glabratis; foliis alternis coriaceis elliptico- v. ovato-oblongis, obtusis, denticulato-serratis, glabris, breviter petiolatis; floribus axillaribus fasciculatis, brevissime pedunculatis, pedicellis flore æquilongis v. longioribus; calycis lobis rotundatis; petalis obovato-rotundatis; ovario immerso, 2–3-loculari; ovulis geminatis, erectis.

Arbor vel *frutex*, ramulis puberulis v. glabris. *Folia* 1¼–1½ poll. longa, ½–1 poll. lata; petiolus ⅛–⅙ poll. longus. *Pedunculi* ad 1 lin. longi v. obsoleti; pedicelli glabri, 1–1½ lin. longi. *Flores* $\frac{1}{10}$ poll. diam., flavido-virescentes. *Calyx* pubescens. *Petala* denique decurva. (*Fructus* ovoideus apiculatus, ¼–⅓ poll. longus.)

Hab. Top of Roheho Mountain, 6° 38′ S. lat., alt. 4800 feet, Dec. 1860, *Col. Grant!* Also from Angola and south of the tropics.

Plate XXI. fig. 1. Bud; fig. 2. Flower lai popen; fig. 3. Flower, vertical section.

RHAMNEÆ.

[1. RHAMNUS, sp., probably *R. prinoides*, L'Hér., Speke's Appendix, 629. Leaves only preserved. A shrub growing by water, with red, currant-sized and -coloured berries, soft and sweet, with a hard stone. Fish are brought to the surface by throwing a mash of its leaves and berries into the water. Native name "m'quatæ-quatæ." December 1862, 3° N. lat.—J. A. G.]

2. ZIZYPHUS JUJUBA, Lam.; DC. Prod. ii. 21; Hemsley in Fl. Trop. Africa, i. 379.—*Z. abyssinicus*, Hochst.; A. Rich. Fl. Abyss. i. 136. *Z. xylopyrus*, Hochst. in hb. Schimp. Abyss. (non Willd.). *Z. orthacantha*, DC. Prod. ii. 21 (ex descr.).

Hab. Madi woods, *Col. Grant!* In leaf only. Widely distributed in the Old-World tropics, and cultivated for the sake of its fruit.

[Native names "kalembo," "m'konazee." Leaf-surface dull, mouldy beneath. In fruit at Ugani, 4° N. lat., in November. Fruit round, smooth-skinned, pink colour, and nearly all stone, leaving nothing to eat. At the markets of Khartoom and Berber, on the Nile, baskets full of this fruit are for sale. In Abyssinia the fruit is pounded and made into a ball, which tastes like a dry old sponge-cake, but fruity also. The colour of this preparation is that of a pease-pudding. The natives throw its mashed fruit into water for the purpose of bringing fish to the surface. Fences are made of the thorny branches; and goats are very fond of the leaves.—J. A. G.]

AMPELIDEÆ.

1. VITIS CORNIFOLIA, Baker in Fl. Trop. Afr. i. 390. Foliis simplicibus ovato-ellipticis, obtusis, minute denticulatis, subtus primum tenuiter tomentosis, supra sparse pilosulis; cymis lateralibus, ramulis divaricatis, pedicellis sæpius umbellulatis, flore subæquilongis; floribus tetrameris; ovario 2-loculari, ovulis geminatis.

Suffrutex, ramulis ultimis subteretibus primum tomentellis deinde glabratis striatisque. *Folia* submembranacea, breviter petiolata, ovato-elliptica, obtusa v. obtusiuscula, basi rotundata, margine remote denticulata, primum supra tenuiter pilosula, subtus tomentosa, denique glabrata, 2–2½ poll. longa, 1 poll. lata; petiolus $\frac{1}{6}$–$\frac{1}{10}$ poll. longus. *Pedunculi* laterales pollicares, partiales divaricati, glabri v. parce tomentosi; pedicelli subumbellati, $\frac{1}{10}$–$\frac{1}{6}$ poll. longi. *Flores* 4-meri. *Calyx* brevis cyathiformis subinteger. *Fructus* (immaturus) ovoideo- v. obovoideo-ellipsoideus, stylo persistente apiculato.

Hab. Madi (658), *Col. Grant!* Fruit edible.

Mr. Baker unites, probably rightly, under the same species a western plant of Barter's, collected in Nigritania. In this latter the leaves are larger, more ovate and acute, with longer petioles. It is described by Barter as "herbaceous, 3 feet" high.

[A low-growing bush, 3 feet high, on a slope by water. Branches alternate, very thickly and fleshily jointed. Leaves alternate, perfectly ovate, 1½ by 1 inch, the edges three- to four-toothed. Neither thorns nor tendrils. Fruit pear-shaped, edible, but not pleasant to eat, ½ inch long, when green dotted at the apex with pink spots, when ripe of a deep purple, with one stone ¼ inch long, with a nick on one side. Ripe at Madi in December. Unknown to our men from 10° S. lat., but called "m'pungee-pungee" by other natives.—J. A. G.]

Plate XXII. fig. 1. Bud; fig. 2. Flower laid open; fig. 3. Fruit.

2. VITIS (CISSUS) QUADRANGULARIS, Linn.; DC. Prod. i. 628; Baker, in Fl. Trop. Afr. i. 399.—*C. tetraptera*, Hook. f. Fl. Nigrit. 263. *C. bifida* et *C. triandra*, Schum. et Thonn. Pl. Guin. 80, 81.

Hab. Unyoro, *Col. Grant!* From Tropical Africa eastward to the Indian archipelago.

[Native name "meeoleh-oleh." Hangs in pendants from lofty trees in Unyoro. The stem takes a distinct turn, and is jointed every six or so inches.—J. A. G.]

3. VITIS GRANTII, Baker in Fl. Trop. Afr. i. 400. Foliis simplicibus, palmatim quinquefidis, inæqualiter denticulatis, sinibus basi rotundatis glabrescentibus; cymis paniculatis, floribus subsessilibus, pentameris; calyce cupuliformi subintegro; ovario sub-biloculare, ovulis geminis.

Rami graciles, elongati, internodiis bisulcatis, glabri v. lana subarachnoidea tenui parce obsiti. *Folia* 5-fida, basi cordata, sinu late rotundato, lobis obovatis v. obovato-ellipticis, apiculatis, breviter et inæqualiter dentato-serratis, membranacea, supra glabrata v. pilis appressis lanatis tenuiter tomentella, infra puberula v. nervis venulisque tomentoso-pubescentibus, 2–3 poll. longa, 2–3½ poll. lata; petiolus 1–1½ poll. *Pedunculi* 1½–2 poll. longi, dichotome divaricatim ramosi. *Alabastra* parva, subglobosa, glabra, subsessilia in cymulas congestas disposita. *Calyx* cupuliformis, subinteger v. obsolete 5-dentatus. *Petala* 5. *Antheræ* ellipticæ, muticæ. *Ovarium* (in alabastro) sub-biloculare; ovula geminata.

Hab. Usui, 2° 42′ S. lat., *Col. Grant!*

Our single specimen is in bud only, so that I have not described the disk or other details of the flower, which are apt to alter in form or relative size by the time of expansion of the flower.

[In flower on the hill-slopes of Usui in November.—J. A. G.]

Plate XXIII. fig. 1. Bud; fig. 2. Flower laid open.

4. VITIS (CISSUS) ADENOCAULIS, Steudel; A. Rich. Fl. Abyss. i. 111; Baker, in Fl. Trop. Afr. i. 405.

Hab. Unyoro, *Col. Grant!* Also Abyssinian. This is the *Vitis subdiaphana* of Appendix to Speke's Journal, 629.

[Climbs amongst the bushes of the forest at Unyoro. Flowers in November and December.—J. A. G.]

5. VITIS (CISSUS) CYPHOPETALA, Fresen. in Mus. Senck. ii. 282; Baker, in Fl. Trop. Afr. i. 407.

Hab. Unyoro, *Col. Grant!* Found also in Abyssinia.

[Climbing amongst shrubs in Unyoro. Flowers October.—J. A. G.]

6. VITIS (CISSUS) CIRRHOSA, Thunb.; DC. Prod. i. 631; Baker, in Fl. Trop. Afr. i. 410. —*Cissus quinata*, Ait.; DC. Prod. *l. c.*

Hab. Karagué, *Col. Grant!* Also in Zambesi and south of the tropics.

[Growing in a thicket of bushes near water at Karagué. In flower December. Inflorescence like an umbel. Stem has coarse hairs of a pale green colour; branches swollen at the leaf-axils. Flowers very small; seem to have four stamina and one pistil. Fruit in December, a green elliptical berry a quarter of an inch long.—J. A. G.]

SAPINDACEÆ.

1. CARDIOSPERMUM HALICACABUM, Linn.; DC. Prod. i. 601; Baker in Fl. Trop. Afr. i. 417.

Hab. Unyoro, common everywhere, *Col. Grant!* Throughout the tropics.

[Native name "m'niolōla," or chain-like, because, when the plant is boiled as a vegetable, it is stringy to eat. A creeper or climber, common everywhere. Seeds black, with a white arillus.—J. A. G.]

ANACARDIACEÆ.

1. RHUS GLAUCESCENS, A. Rich. Fl. Abyss. i. 143; Oliv. Fl. Trop. Afr. i. 437.—*R. undulatum*, A. Rich. *l. c.* 145. *R. crenulatum*, A. Rich. *l. c.* 142. *R. Quartinianum*?

A. Rich. *l. c.* 141. *R. Gueinzii*, Sond. Fl. Cap. i. 515. *R. Kotschyana*, Fenzl, in Flora, 1844, 312.

Hab. Madi, *Col. Grant!* and in Abyssinia, Senaar, Zambesia, and Natal.

[Native name "m'sangool'a." Half tree-size. Leaves and flowers are sweetly scented. Foliage light and airy; bark light-coloured; branches straight and thin. Calyx green; corolla white. Fruit green in December, and flatly round, not edible, and showing two sections. The natives scrub their teeth with its branches: they have a superstition that if its seeds be thrown about they will fall upon leaves fit for eating.—J. A. G.]

2. Rhus villosa, Linn. f.; DC. Prod. ii. 70; Oliv. Fl. Trop. Afr. i. 439.—*R. pyroides*, A. Rich. Fl. Abyss. i. 145.

Hab. Karagué, *Col. Grant!* Also in Abyssinia and Zambesia.

[Thorny shrub by water, and in flower at Karagué in December, also at Madi.—J. A. G.]

3. Sorindeia madagascariensis, DC. Prod. ii. 80; Oliv. Fl. Trop. Afr. i. 440. Arborea, glabra; foliis imparipinnatis, 7–11-foliolatis, foliolis oblongo-ellipticis v. oblongis breviter acuminatis v. obtusis, penninerviis, petiolulatis; floribus polygamis paniculatis, 4–5-meris, fl. masc. staminibus 15–20, ovarii rudimento 0: fl. hermaphroditis 5(–7)-andris.

Arbor interdum procera, omnino glabra. *Ramuli* teretes. *Folia* ½–1½ ped. longa, petiolo communi subtereti; foliolis petiolulatis, tenuiter coriaceis, oblongo- v. obovato- v. oblanceolato-ellipticis, apiculatis v. breviter acuminatis v. obtusis, basi sæpius rotundatis, integris v. obsolete sinuatis, penninerviis, costa nervisque lateralibus utrinque 7–10 subtus prominentibus; 3–5 poll. longis, 1–2 poll. latis, petiolulis ⅙–¼-poll. *Flores* flavi, polygami, parvi, numerosi, brevissime pedicellati, paniculis ramosissimis divaricatis v. pendulis ad 1–2 ped. longis, lapsu foliorum lateralibus v. secus truncum dispositis. *Calyx* cupuliformis, 5(–6)-dentatus. *Petala* 5(–6), libera, ovato-lanceolata v. elliptica, acutata, æstivatione valvata, sub anthesi patentia. *Fl. masc.*—*Stamina* 15–20, libera, corolla paullo breviora; antheræ lineares, obtusæ, muticæ, 2-loculares, longitudinaliter dehiscentes, filamento 5–6-plo longiores. *Ovarii* rudimentum 0. *Fl. fem.*—*Stamina* 5–6, petalis alterna, calycis tubo inserta. *Ovarium* ovoideum, glabrum, 1-loculare; stylus brevis, crassiusculus; stigma terminale 3-lobum, lobulis reflexis adnatis; ovulum unicum lateraliter affixum. *Fructus* parvus, tenuiter drupaceus, ellipsoideus, ⅓–½ poll. longus, stylo subpersistente brevi apiculatus, monospermus. *Semen* exalbuminosum, radicula supera minutissima.

Hab. Zungomero, 7°–8° S. lat., *Col. Grant!* Also near Zanzibar and in Madagascar. Cultivated in the Mauritius and India.

[Native name "m'peeree peeree." A lofty fruit-tree, 8 feet in circumference, found by water not distant from the sea. Bark dark brown; foliage dark green; calyx pale green; corolla yellow, twice the length of calyx. Stamina 15. Fruit a drupe, with a slightly compressed stone, more of an oblong than a sparrow's egg, very thin coat of pulp, of a pleasant sweet-sour mangoe taste, but acrid also. These drupes grow in a remarkable and interesting way, not only from the branches, but chiefly from the main trunk of the tree, looking as if they were air-roots with fruit upon them, or like parasites. There may be 200 of the tempting fruit hanging in great bunches two feet in length. Found on the banks of the M'Gæta river, 6° S. lat., and in Zanzibar island, 7° S. lat.—J. A. G.]

Plate XXIV. fig. 1. Male flower; fig. 2. Petal; fig. 3. Stamen; fig. 4. Hermaphrodite flower; fig. 5. Stamen; fig. 6. Ovary; fig. 7. The same, longitudinal section; fig. 8. Fruit; fig. 9. Inner face of a cotyledon; fig. 10. Fruit, transverse section.

4. Odina fruticosa, Hochst.; A. Rich. Fl. Abyss. i. 141; Oliv. Fl. Trop. Afr. i. 446. Arbor; foliis imparipinnatis, 9–15-foliolatis, glabratis, in apicibus ramorum confertis,

foliolis oblique lanceolatis, acuminatis, obtusiusculis, subsessilibus; floribus polygamis, tetrameris, spicatis.

Arbor, ramis crassiusculis, rugulosis, lenticellatis, glabratis. *Folia* alterna in apicibus ramorum conferta, subcoriacea, glabra v. glabrescentia, petiolo communi 6–10 poll. longo, interdum supra puberulo; foliola ovato- vel lanceolato-oblonga, sessilia v. subsessilia, obtusiuscula acutata v. acuminata, basi plus minus rotundata nonnunquam cordata, integra, lateralia sæpius subopposita 4–7-juga, $1\frac{1}{2}$–3 poll. longa, $\frac{3}{4}$–$1\frac{1}{2}$ poll. lata, terminalia æquilonga. *Spicæ* simplices v. ramosæ, axillares, $1\frac{1}{2}$–3 poll. longæ, tomentosæ, bracteatæ; bracteæ parvæ, squamiformes, ovatæ, caducæ. *Flores* subsessiles v. brevissime pedicellati, $\frac{1}{4}$–$\frac{1}{3}$ poll. diam., sæpius 4-meri. *Calyx* minutus, 4-partitus, lobis ovato-rotundatis, imbricatis. *Petala* elliptica, concava, basi leviter angustata, apice interdum recurva, glabra, imbricata. *Fl. masc.*—*Stamina* 8; filamenta filiformia, exserta, glabra; antheræ ellipsoideæ v. ovato-ellipsoideæ, dorsifixæ, 2-loculares, longitudinaliter dehiscentes. *Ovarii* rudimentum 3–4-fidum. *Fl. fem.*—*Ovarium* sessile 1-loculare; ovulum solitarium, pendulum; styli brevissimi 3–5. *Fructus* parvus, drupaceus, apice 3–5 apiculatus, putamine subosseo. *Semen* . . . .

Hab. Madi, *Col. Grant!* Also in the same province what I take to be a small-leaved variety of the same, var. ? *parvifolia* of Fl. Trop. Afr. *l. c.* (*O. Schimperi*, of Appendix to Speke's Journal, p. 630). Found also in Abyssinia and Senaar.

Odina fraxinifolia, Fenzl, known to me only by name, is probably the same. The nuts are apparently occasionally 2-celled.

[Native name "m'boomboo." Tree—trunk 3 feet in circumference. Wood heavy, small, and useless. Branches are of a dirty, smoky appearance, low, thick, and not graceful in shape. Leaf-surface of a deep dull green colour, beneath paler and rough. It flowers from the tips of its branches. Calyx green, corolla white. The tree was nearly leafless in December, but was in flower and unripe fruit. Fruit was green, juicy, with a dull surface; near its apex there are four curious raised marks. Its size now is that of an elongated pea; but it is said to become nearly walnut size. Its roots make first-rate nets, used in capturing wild animals.—J. A. G.]

Plate XXV. fig. 1. Male flower; fig. 2. Rudiment of the ovary from the same; fig 3. Female flower; fig. 4. Ovary; fig. 5. The same, longitudinal section; fig. 6. Young fruit.

5. Sclerocarya Birrea, Hochst.; Walp. Rep. v. 418; Oliv. Fl. Trop. Afr. i. 449.—*Spondias Birrea*, A. Rich. in Fl. Seneg. i. 152, t. 41.

Hab. Rocky ground, Madi, *Col. Grant!* Also in Abyssinia, Senaar, and westward in Senegambia.

[Native name "m'choowee" and "m'pemboo." Tree—trunk attains a girth of 12 feet. In fruit at 3° N. lat. in February. Bark grey, soft, cutting red, and sticky; branch-bark is rough, and dark brown. The young leaflets are notched at their tips, older ones are more pointed. In February the unripe fruit was in size like a small lime; sarcocarp apple-scented, green and fleshy. On being cut a tasteless sticky juice appears, which bites a sore. Stone large, containing one or two kernels, which are milky, and eaten like almonds. Its wood is made into stools and pestles for grain.—J. A. G.]

The "*Anacardiacea?*" of Appendix to Speke's Journal, p. 630, from Madi, is quite indeterminable. The flowers and fruit there referred to are not in the herbarium; only a leafy shoot. The leaves are imparipinnate, lateral leaflets 5–6-jugate, subsessile, obliquely ovate-lanceolate, acuminate, entire, the terminal leaflet ovate-acuminate from a cordate base. The bark tends to flake off, as in *Boswellia*; and the extremities have exuded a pale resin.

Leguminosæ.

1. Crotalaria glauca, Willd.; DC. Prod. ii. 127; Baker, in Fl. Trop. Afr. ii. 12.—

C. genistifolia, Schum. et Thonn. Pl. Guin. 335. *C. acutifolia*, Steud. in Schimp. hb. Abyss. No. 829.

Hab. Plantain-groves, Unyoro, *Col. Grant!* Widely spread in Tropical Africa.

[Native name "m'cæwæ." Three feet high. Root grows straight down into the ground. Leaves of a livid green colour. At 3° N. lat. the people eat its flowers, pods, and leaves; and from its abundance in the fields it appeared as if it was cultivated here.—J. A. G.]

2. Crotalaria calycina, Schrank; DC. Prod. ii. 129; Baker, in Fl. Trop. Afr. ii. 15.

Hab. Unyoro, *Col. Grant!* Extending from West Tropical Africa eastward through India to China and Australia.

[Leaves covered behind with a silvery down. The calyx is hairy and brown, like a caterpillar; corolla pale yellow. Pods three quarters of an inch long, dumpy in shape. Flowers in September at 2° N. lat.—J. A. G.]

3. Crotalaria nigricans, Baker, in Fl. Trop. Afr. ii. 21. Suffruticosa, ramosa, diffusa; ramulis foliisque laxe pilosis; stipulis parvis, ovato-lanceolatis, reflexis; petiolo foliolis ternatis oblanceolatis mucronatis multo breviore; floribus terminalibus capitatis subsessilibus; bracteolis apiculatis, calyce profunde 4-fido brevioribus; corolla inclusa; ovario pauciovulato.

Suffrutex 1–2 pedalis, erectiusculus, ramosus, laxe pilosus, ramulis divaricatis teretibus. *Folia* breviter petiola, 3-foliolata, stipulata; stipulis ovato-lanceolatis, acuminatis, arcte reflexis, $\frac{1}{10}$–$\frac{1}{6}$ poll. longis; petiolo $\frac{1}{8}$–$\frac{1}{6}$ poll. longo; foliolis oblanceolatis, obtusis, mucronulatis, subsessilibus, subæquilongis v. centrali paullo longiore, $\frac{1}{2}$–$\frac{3}{4}$ poll. longis. *Capitula* pauci- v. pluriflora, terminalia, bracteata; bracteolis geminatis parvis, rotundatis, apiculatis, tubo calycis æquilongis v. eodem longioribus. *Calyx* piloso-pubescens, profunde 4-fidus (lobis 2 superioribus connatis), lobis subæqualibus, late ellipticis, apiculatis. *Corolla* calyce brevior; vexillum rotundatum, breviter unguiculatum, ungue calycis lateri posteriori adnato, dorso tenuiter hirtellum; alæ obovato-ellipticæ, obtusæ, unguiculatæ; carina incurva, subrostrata, margine anteriore ciliolata, unguiculata. *Stamina* 10, in vaginam supra fissam coalita. *Ovarium* hirsutum, pauci- (4–5) ovulatum; stylus supra ovarium incrassatus, compressus, denique abrupte inflexus. *Legumen* . . . .

Hab. Mininga, *Col. Grant!*

I have not seen ripe legumes. By a misprint the petioles are described by Mr. Baker (Fl. Trop. Afr. *l. c.*) as $1\frac{1}{2}$–2 inches instead of $1\frac{1}{2}$–2 lines long.

[Root deep in the ground. In flower at 4° 18′ S. lat., near cultivation, in April.—J. A. G.]

Plate XXVI. A. fig. 1. Flower with the lateral bracteoles; fig. 2. The same, front view; fig. 3. Vexillum; fig. 4. One of the wing-petals; fig. 5. Carina; fig. 6. Stamens; fig. 7. Two alternate anthers, with the free extremity of their filaments; fig. 8. Ovary.

4. Crotalaria ononoides, Benth. in Hook. Lond. Journ. Bot. (1843) ii. 572; Baker, in Fl. Trop. Afr. ii. 22.—*C. involucrata*, Soland. MSS.

Hab. Karagué, December 1861, *Col. Grant!*

[Grows in slight tufts upon the hills of Karagué, 4500 feet above sea-level. In fruit December. —J. A. G.]

5. Crotalaria cephalotes, Steud. in Schimp. hb. Abyss. No. 695; A. Rich. Fl. Abyss. i. 156; Baker, in Fl. Trop. Afr. ii. 23.

Hab. Madi, in dry bare woods, *Col. Grant!* Found also in Abyssinia and in West Tropical Africa.

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6. Crotalaria hyssopifolia, Klotzsch, in Peters, Mossamb. Bot. 55; Baker, in Fl. Trop. Afr. ii. 24.—*C. gracillima*, Klotzsch, *l. c.* *C. globifera*, App. Speke's Journ. 630.

Hab. Mininga, *Col. Grant!* Also in Abyssinia and Mozambique.

[In fruit and flower March at 4° 18′ S. lat., where it grows 18 inches high as a weed.—J. A. G.]

7. Crotalaria lanceolata, E. Meyer, Comm. Pl. Afr. Austr. 24; Baker, in Fl. Trop. Afr. ii. 36.—*C. mossambicensis*, Klotzsch, in Peters, Mossamb, Bot. 61, t. 10.

Hab. Zungomero, Oct. 1860, *Col. Grant!* Grows in Mozambique, also south of the Tropics.

Mr. Baker thinks it may be *C. pallida* of Aiton, and regards *C. cleomoides*, Klotzsch (*l. c.*), as perhaps a form, differing in the longer and more cuspidate calyx-teeth.

[Grows 6 feet high, with wide branches, more like stalks. Flowers bright yellow in October, at 6°–7° S. lat.—J. A. G.]

8. Crotalaria intermedia, Kotschy, in Sitzungsb. Wien. Acad. 1864, 362, t. 3; Baker, in Fl. Trop. Afr. ii. 37.

Hab. Under 2° N. lat., *Col. Grant!* Also on the White Nile and in Angola.

[A very handsome tall plant, flowering in August in fallow and grassy ground at 2° N. lat.—J. A. G.]

9. Crotalaria Grantii, Baker, in Fl. Trop. Afr. ii. 32. Fruticosa, erecta, ramosa?; ramis petiolisque piloso-pubescentibus; stipulis setaceis, foliolis ternis ellipticis v. obovatis, late acutatis, mucronatis, brevissime æqualiter petiolulatis, petiolo æquilongis v. eodem brevioribus; floribus spicatis, spicis terminalibus erectis; bracteis lanceolatis, caducis.

Frutex? ramosus, ramis teretibus tomentoso- v. breviter piloso-pubescentibus. *Folia* trifoliolata, petiolata, stipulata; stipulis setaceis pilosis, $\frac{1}{4}$ poll. longis; petiolo (foliorum ramulorum) 1–1$\frac{1}{2}$ poll. longo, pubescente; foliolis obovatis v. ellipticis, obtusiusculis, mucronulatis, tenuiter pilosulis, 1–1$\frac{1}{2}$ poll. longis, petiolulo $\frac{1}{15}$–$\frac{1}{12}$ poll. *Racemi* pubescentes terminales, pauci- vel pluriflori; bracteæ lineari-lanceolatæ, deciduæ; pedicelli $\frac{1}{8}$–$\frac{1}{3}$ poll. longi; bracteolæ lineares acuminatæ, $\frac{1}{5}$–$\frac{1}{4}$ poll. longæ. *Calyx* pilosus, profunde 5-fidus, lobis subæqualibus lineari-lanceolatis, acutis, falcatis, tubo 2–3-plo longioribus. *Corolla* calycem superans; vexillum obovato-rotundatum, integrum, callo bifido basi instructum; alæ oblanceolato-oblongæ, obtusæ, unguibus brevibus recurvatis; carina falcata, subacuta, subincurva, marginibus utrinque coalitis. *Stamina* in vaginam supra fissam coalita; antheræ alternatim elongato-lineares et breviores ellipticæ. *Ovarium* subsessile apicem versus appresse pilosum multiovulatum, ovulis 3–4-seriatis; stylus incurvus elongatus, intus longitudinaliter tenuiter barbatus. *Legumen* subsessile, turgidum, ellipsoideo-oblongum, pilosum, 1$\frac{1}{2}$–1$\frac{3}{4}$ poll. longum, $\frac{1}{2}$–$\frac{3}{4}$ poll. latum. *Semina* (immatura) numerosissima, funiculata.

Hab. Banks of Nile, 5° 10′ N. lat., in dry soil, *Col. Grant!*

Plate XXVI. B. fig. 1. Vexillum; fig. 2. One of the wing-petals; fig. 3. Carina; fig. 4. Ovary; fig. 5. The same, longitudinal section.

10. Crotalaria laburnifolia, Linn.; Benth. in Hook. Lond. Journ. Bot. ii. (1843), 582.—*C. capensis*, Baker, in Fl. Trop. Afr. ii. 38; App. to Speke's Journ. 630.

Hab. 5° S. lat., alt. 3800 feet, *Col. Grant!* Also in East India and Tropical Australia, chiefly in sandy districts near the sea.

C. capensis, Jacq., under which name this plant is described by Mr. Baker, differs in possessing stipules, less-deciduous bracts, and shorter carinal beak.

[Grows in forests where there are few trees and sandy soil. In flower March at 5° S. lat.—J. A. G.]

11. Crotalaria striata, DC. Prod. ii. 131; Baker, in Fl. Trop. Afr. ii. 38; Bot.

Mag. t. 3200.—*C. Saltiana*, Andr. Bot. Rep. t. 648. *C. pisiformis*, Guill. et Perr. Fl. Seneg. 162. *C. pallida* et *C. laburnoides*, Klotzsch, in Peters, Mossamb. Bot. 57.

Hab. 5° S. lat., alt. 3800 feet, fl. March, *Col. Grant!* Widely spread in the tropics.

12. CROTALARIA FERTILIS, Delile in Ferret et Galinier, Voy. Abyss. 122, t. 11.

To this species Mr. Baker, in Fl. Trop. Afr. ii. 41, refers with doubt an imperfect specimen gathered by Col. Grant in lat. 5° S., the *C. goreensis* of App. Speke's Journal, p. 630.

[Grows 6 inches high at alt. of 5000 feet. Calyx brown; corolla pale brown, with darker lines all over it. Little or no down upon the small round inflated pods. In flower and pod February.—J. A. G.]

13. LUPINUS ALBUS, Linn.; DC. Prod. ii. 407.—*L. Termis*, Forsk.; DC. *l. c.*; Baker, in Fl. Trop. Afr. ii. 44.

Hab. Cultivated on the Upper Nile, 15° N. lat. Ripe in March, *Col. Grant!* Cultivated also in the East and in South Europe.

14. TRIFOLIUM POLYSTACHYUM, Fresen. in Mus. Senck. ii. 50; Baker, in Fl. Trop. Afr. ii. 58.

Hab. Robého Mountains, alt. 4700 feet, 6° 38′ S. lat., *Col. Grant!* Found also in Angola and Abyssinia.

15. PSORALEA PLICATA, Delile; DC. Prod. ii. 221; Baker, in Fl. Trop. Afr. ii. 64.

Hab. Banks of Nile, April 1863 (in fruit), *Col. Grant!* We have the same species from near lake Tschad in Central Africa.

16. INDIGOFERA CAPITATA, Kotschy, Plantæ Binderianæ, 16, tab. 6; Baker, in Fl. Trop. Afr. ii. 75.—*Indigofera* no. 9, App. Speke's Journ. 630.

Hab. Open ground, Madi, Dec. 1862, *Col. Grant!* Gathered also on the White Nile by Binder and Dr. Murie.

[A bushy-growing plant, in flower at 3° N. lat. in December.—J. A. G.]

17. INDIGOFERA PENTAPHYLLA, Linn.; DC. Prod. ii. 230; Baker, in Fl. Trop. Afr. ii. 82.—*I. glabra*, Linn. Sp. Pl. 1062. *I. fragrans*, Retz, Obs. iv. 29. *I. viscosa*, var. *subglabra*, A. Rich. Fl. Abyss. i. 182; Wight, Icones, t. 385.

Hab. Woods, Madi, Dec. 1862, *Col. Grant!* Also in Upper Guinea, Mozambique, and India.

18. INDIGOFERA STENOPHYLLA, Guill. et Perr. Fl. Seneg. 188, t. 48; Baker, in Fl. Trop. Afr. ii. 83.

Hab. Waste ground, Madi. Fl. and fruit Feb. 1863, *Col. Grant!* Widely spread in Northern Tropical Africa.

19. INDIGOFERA PAUCIFOLIA, Delile, Fl. d'Egypt, 107, t. 37. fig. 22; DC. Prod. ii. 224; Baker, in Fl. Trop. Afr. ii. 88.—*I. erythrantha*, Hochst. in hb. Schimp. Abyss. 2178.

Hab. Upper Nile, 15°–16° N. lat., *Col. Grant!* Also in Egypt and through Arabia to India.

[Sometimes dwarfed, scrubby, and woody on the left bank of the Blue Nile, where it is seen used as fencing; again, near Mount Rocan at 16° N. lat. it grows erect amongst tallstron g-stalked grass. In fruit April.—J. A. G.]

20. INDIGOFERA HIRSUTA, Linn.; DC. Prod. ii. 228; Jacq. Ic. Pl. Rar. t. 569; Hook.

Comp. Bot. Mag. ii. t. 24; Beauv. Fl. Ow. et Ben. t. 119; Baker, in Fl. Trop. Afr. ii. 88. —*I. ferruginea*, Schum. et Thonn. Pl. Guin. 370. *I. fusca*, G. Don, Gen. Syst. ii. 211.

Hab. Unyoro, Aug. 1862, *Col. Grant!* Widely distributed in the Old-World tropics.

21. INDIGOFERA SCHIMPERI, Jaub. et Spach, Ill. Pl. Or. t. 484; Baker, in Fl. Trop. Afr. ii. 93.—*I. tettensis*, Klotzsch, in Peters, Mossamb. Bot. 51. *Indigofera* no. 8, in App. Speke's Journ. 630.

Hab. Mgéta river, 7° 20′ S. lat., amongst weeds and thorns, Oct. 1860, *Col. Grant!* Found also in the Nile provinces and Zambesi-land.

[Grows 10 feet high, amongst reeds and thorns, at 7°–8° S. lat. Fruits in October.—J. A. G.]

22. INDIGOFERA SECUNDIFLORA, Poiret; DC. Prod. ii. 94; Baker, in Fl. Trop. Afr. ii. 94.

Hab. Unyoro, Aug. 1862, *Col. Grant!* Also in Abyssinia, Nubia, and Upper Guinea.

23. INDIGOFERA ENDECAPHYLLA, Jacq. Ic. Pl. Rar. t. 570; DC. Prod. ii. 96; Bot. Reg. t. 789; Baker, in Fl. Trop. Afr. ii. 96.

Hab. Makata, 7° S. lat., Nov. 1860, *Col. Grant!* Widely spread in Tropical and South Africa.

[The root tastes of liquorice, and is deep in the hard soil. In flower at 7° S. lat. in November. —J. A. G.]

24. INDIGOFERA EMARGINELLA, Steud. in hb. Schimp. Abyss. No. 735; A. Rich. Fl. Abyss. i. 184; Baker, in Fl. Trop. Afr. ii. 99.—*I. coluteifolia*, Jaub. et Spach, Ill. Pl. Or. t. 487, 488.

Hab. Karagué, March 1862, *Col. Grant!* And in Abyssinia and Angola.

[Stem erect and woody. Flowers in clusters from the leaf-axils in March in Karagué hills. The natives were not observed to use any of these indigos as dyes.—J. A. G.]

25. TEPHROSIA VOGELII, Hook. fil. Fl. Nigrit. 296; Baker, in Fl. Trop. Afr. ii. 110. Fruticosa, ramis petiolisque pilosis tomentosisve; foliis imparipinnatis, foliolis oblongis v. oblanceolatis, obtusis, lateralibus 8–12-jugis; stipulis lanceolatis; floribus amplis racemosis; bracteis ovatis, apiculatis, calycis 4-fidi labio superiore subquadrato subintegro; legumine lineari, compresso, velutino, polyspermo.

Frutex 6–12-pedalis, ramis obtuse angulatis, velutino-tomentosis, ferrugineo-pilosis v. tomentoso-pilosis. *Folia* imparipinnata, petiolo communi 3½–10 poll. longo, tomentoso v. velutino; foliolis oblanceolato-oblongis v. ovali-oblongis, obtectis, mucronatis, supra appresse scabrido-hirtis, subtus sericeo-pilosis, venulis oblique parallelis striatis, breviter petiolulatis, 1½–2½ poll. longis, ½–¾ poll. latis; petiolulo $\frac{1}{10}$–$\frac{1}{12}$ poll. longo. *Stipulæ* lanceolatæ, caducæ, ¾–1 poll. longæ. *Racemi* validi, terminales, erecti, primum pyramidales. *Bracteæ* caducæ, ovatæ, apiculatæ v. acuminatæ, ⅓–⅔ poll. longæ, velutino-pilosæ. *Pedicelli* ½–1 poll. longi, pilosi. *Calyx* pilosus, 4-fidus, bilabiatus, labio superiore late quadrato truncato, subintegro v. sinuato, lobis lateralibus late ellipticis obtusissimis, lobo anteriore conduplicato late ovato apiculato, lateralibus paullo longiore. *Corolla* purpurea v. alba, calyce 3–5-plo longior; vexillum rotundatum, 1¼–1½ poll. diam., breviter unguiculatum, ungue concavo, dorso sericeum; alæ obovato- v. oblanceolato-cuneatæ, obtusissimæ, carinam obtusam subæquantes. *Stamina* monadelpha v. filamento vexillari sublibero; antheræ ellipticæ v. ovato-ellipticæ. *Ovarium* lineari-oblongum, compressum, dense hirsuto-villosum; stylus incurvatus, compressus, tenuiter pilosulus, stigma terminale. *Legumen* rectum v. curvulum, lineari-oblongum, oblique apiculatum, sessile, dense velutino-pilosum, 4–5 poll. longum, ½ poll. latum, 15–20-spermum.

Hab. Unyoro, Oct. 1862, *Col. Grant!* Originally described from West Tropical Africa. Found also in Zambesi-land and Zanzibar.

[Shrub, very handsome, from its richness of foliage and its splendid clusters of pure white flowers. Seven feet high and bushy; found around villages as a fence in Uganda and Unyoro; nowhere south of the equator. Calyx purplish. A mash is made of this plant by the natives to kill fish. The mash is thrown into the water; the fish float to the surface dead, and are taken for food.—J. A. G.]

Plate XXXI. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. Ovary and calyx.

26. Tephrosia æquilata, Baker, in Fl. Trop. Afr. ii. 113. Ramis petiolisque tomentoso-pilosis; foliis imparipinnatis, foliolis lateralibus 7–8-jugis, lineari-oblongis, obtusis, appresse pilosis; stipulis ovato- v. oblongo-lanceolatis; racemis terminalibus; bracteis lanceolatis acuminatis; calyce 2-labiato, labio superiore 2-fido dentibus falcato-incurvis, cæteris lanceolatis, anteriore acuminato; corolla calyce 2–3-plo longiore; legumine lineari-oblongo, hirto-tomentoso, 1–1½ poll. longo.

Frutex? *Rami* teretes, breviter fulvo- v. ochraceo-tomentosi. *Folia* 15–17-foliolata; petiolo communi 3 poll. longo, tomentoso, foliolis lineari-oblongis, obtusis, integris, breviter petiolulatis, supra adpresse sericeo-pubescentibus, subtus piloso-tomentosis, 1½–1¾ poll. longis, 5 lin. latis; petiolulo $\frac{1}{20}$–$\frac{1}{12}$-poll. *Stipulæ* dorso pilosæ, intus glabræ, venosæ, $\frac{1}{3}$–$\frac{1}{2}$ poll. longæ. *Racemi* terminales, tomentosi; bracteæ lanceolatæ, acuminatæ, pilosæ, deciduæ. *Pedicelli* $\frac{1}{6}$–$\frac{1}{4}$ poll. longi. *Calyx* dense pilosus, 2-labiatus, labio superiore ad medium bifido. *Corolla* calyce duplo longior; vexillum late rotundatum v. reniformi-rotundatum, $\frac{1}{2}$–$\frac{2}{3}$ poll. latum; alæ oblique obovatæ, longe unguiculatæ, carinam apice obtuse incurvatam subæquantes. *Stamina* monadelpha, filamento vexillari basi libero (paullo supra basin abrupte incrassato). *Ovarium* velutinum; stylus incurvus, transverse compressus, intus barbatus; stigma terminale. *Legumen* lineari-oblongum, sessile, apiculatum, pilosum, 5–6-spermum, 1–1½ poll. longum, $\frac{1}{4}$ poll. latum. *Semina* ellipsoidea, compressa, subsessilia, hilo minuto.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[Grows in tufts upon the Karagué hills, at an elevation of 5000 feet. In fruit December.—J. A. G.]

Plate XXIX. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. 6. Detached filament and anther; fig. 7. Ovary and calyx.

27. Tephrosia polysperma, Baker, in Fl. Trop. Afr. ii. 113. Fruticosa, piloso-hirsuta; foliis imparipinnatis, foliolis lateralibus 5–7-jugis, ovali- v. oblanceolato-oblongis, obtusis, emarginatis; floribus racemosis; bracteis subulatis caducis; calyce breviter 4-fido, corolla multo breviore, lobis deltoideis, acutiusculis; legumine lineari hirto, 16–20-spermo.

Rami subteretes, sulcati, pilis fulvis patentibus v. adscendentibus piloso-hirti. *Folia* petiolo communi ad 5–6 poll. longo, piloso, foliolis breviter petiolulatis, ovali-oblongis v. oblanceolatis, retusis v. emarginatis, mucronulatis, supra tenuiter appresso-hirtis subparallele oblique venosis, subtus sericeo-pilosis, 1½–2 poll. longis, 5–6 lin. latis; petiolulo hirto 1-lin. *Stipulæ* subulatæ, dorso hirtæ, ½ poll. longæ, deciduæ. *Racemi* terminales erecti, piloso-hirti; bracteæ lineari-subulatæ, subrigidæ, hirsutæ, caducæ. *Pedicelli* $\frac{1}{6}$–$\frac{1}{4}$ poll. longi, fructiferi arcte erecti. *Calyx* brevis campanulatus, hirsutus, breviter 4-fidus v. dentatus; lobis deltoideis, posteriore latiore subintegro, anteriore acutiore. *Corolla* calyce multo longior; vexillum dorso sericeum, alæ oblanceolato-oblongæ, obtusæ, carina obtusiuscula paullo breviores. *Stamina* in vaginam fissam monadelpha; antheræ uniformes, late ellipticæ. *Ovarium* dense pilosum; stylus pilosus. *Legumen* lineare curvulum, compressum, sessile, apiculatum, fulvo-hirtum, 16–20-spermum, 2–2¾ poll. longum, ¼ poll. latum.

Hab. Uganda, July 1862, *Col. Grant!* The material hardly suffices for a full description.

[In fruit in July in the plantain-groves of Uganda under the equator.—J. A. G.]

Plate XXX. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. 6. Ovary and calyx.

28. TEPHROSIA RIGIDA, Baker, in Fl. Trop. Afr. ii. 114. Fruticosa, ramis rigidis, teretibus, glabratis; foliis imparipinnatis, foliolis lineari- v. ovali-oblongis, obtusis, mucronulatis, subtus appresse breviter sericeis, lateralibus 7–8-jugis; stipulis lineari-subulatis; racemis terminalibus; bracteis subulatis rigidulis, pedicellis subæquilongis; calyce 2-labiato, labio superiore deltoideo, 2-dentato, lobis lateralibus deltoideis acutis, anteriore acuminato, corolla 3–5-plo breviore; legumine lineari, apice apiculato incurvato, sessili, 6–10-spermo, breviter hirtello, 2-poll. longo, $\frac{1}{5}$ poll. lato.

Frutex 8–9-pedalis. *Rami* teretes, sublæves, ultimi breviter sericei, glabrescentes. *Folia* 13–17-foliolata; petiolo communi 3–6 poll. longo, appresse sericeo-piloso; foliolis ovali-oblongis, obtusis, mucronatis, parallele oblique venosis, petiolulatis, supra glabratis, venulis prominulis, subtus breviter appresse sericeis, 1–2 poll. longis, $\frac{1}{4}$–$\frac{1}{2}$ poll. latis; petiolulo $\frac{1}{12}$–$\frac{1}{8}$ poll. longo. *Stipulæ* lineari-subulatæ, acutæ, rigidiusculæ, deciduæ, $\frac{1}{6}$–$\frac{1}{5}$ poll. longæ. *Racemi* terminales simplices v. basi ramosi, pubescentes v. puberuli. *Bracteæ* subulatæ, rigidulæ, $\frac{1}{4}$ poll. longæ, deciduæ. *Pedicelli* erecti puberuli, $\frac{1}{4}$ poll. longi. *Calyx* campanulatus 2-labiatus, labio superiore deltoideo breviter 2-dentato, lobis lateralibus deltoideis acutis, anteriore acuminato. *Corolla* calyce 3–5-plo longior; vexillum rotundatum, breviter late unguiculatum, dorso pilosum; alæ oblongæ, obtusæ, unguiculatæ, carinam breviter subacute rostratam unguiculatam æquantes. *Stamina* monadelpha, filamento vexillari basi libero; antheræ uniformes. *Ovarium* pilosum; stylus compressiusculus intus barbatus. *Legumen* lineare apice incurvatum, longe apiculatum, 6–10-spermum, valvis breviter hirto-tomentosis.

Hab. Madi, Dec. 1862, *Col. Grant!*

[Grows by the burn at Madi to a height of eight or nine feet. In flower and fruit in December.—J. A. G.]

Plate XXVIII. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. 6. Ovary and calyx.

29. TEPHROSIA LONGIPES, Meissn. in Hook. Lond. Journ. Bot. ii. (1843), 87; Baker, in Fl. Trop. Afr. ii. 120.

Hab. Karagué, *Col. Grant!*

The specimen is in fruit only. It differs from Cape specimens in the somewhat shorter and more closely pilose-pubescent legumes.

[A slender plant, growing at an elevation of 4500 ft., with remarkably long flower-stalks and brown pods, ripe in March.—J. A. G.]

30. TEPHRÓSIA REPTANS, Baker, in Fl. Trop. Afr. ii. 121. Fruticosa, decumbens; ramis subangulatis, patentim pilosis; foliis imparipinnatis, foliolis ovali-oblongis, obtusis v. retusis, mucronatis, pilosis, lateralibus 7–10-jugis; stipulis lineari-subulatis persistentibus; racemis terminalibus elongatis; bracteis anguste lineari-subulatis, pedicellos æquantibus v. superantibus; calyce 5-fido, lobis subulatis, 2 posterioribus basi breviter connatis; corolla calyce 3–4-plo longiora; legumine sessile lineari recto apiculato breviter hirtello, 15–17-spermo.

Frutex decumbens, interdum 4 ped. altus. *Rami* elongati, patentim pilosi. *Folia* 15–21-foliolata, petiolo communi piloso 4–7 poll. longo, foliolis ovali- v. oblanceolato-oblongis, obtusis v. retusis, mucronatis, supra breviter appresse hirtellis, subtus sericeo-pilosis, parallele oblique venosis, brevissime petiolulatis; $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longis, $\frac{1}{3}$–$\frac{1}{2}$ poll. latis; petiolulo hirto, $\frac{1}{20}$ poll. longo. *Racemi* elongati, subdissiti-

flori, pilosuli. *Bracteæ* lineari-subulatæ, 3–5 lin. longæ; bracteolæ subulatæ, breviores. *Pedicelli* $\frac{1}{6}$–$\frac{1}{4}$ poll. longi. *Calyx* 2-labiatus hirtus, tubo brevi campanulato, labio superiore profunde 2-fido, lobis subulatis, lateralibus et anteriore subæquilongis, subulatis, corolla 3–4-plo brevioribus. *Corolla* rosea, petalis subæquilongis; vexillum obovato-rotundatum; alæ obtusæ; carina obtusa, apice haud incurva. *Legumen* sessile, lineare, rectum, apiculatum, puberulo-hirtellum, valde compressum, 15–17-spermum.

Hab. 5° S. lat., alt. 3800 ft., *Col. Grant!*

[Creeps along the ground amongst luxuriant vegetation near water, at 5° S. lat. In flower and fruit in March.—J. A. G.]

Plate XXVII. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. 6. Ovary and calyx.

31. Tephrosia eriosemoides, Oliv., sp. nov. Frutescens, sericeo-tomentosa; ramis adscendentibus; foliis imparipinnatis, 5-foliolatis v. superioribus 3-foliolatis, foliolis oblanceolato- v. ovali-oblongis, obtusis; stipulis subulatis; racemis terminalibus; floribus breviter pedicellatis; calyce 5-fido, lobis acutis 2. posterioribus tubo æquilongis, 3 anterioribus lanceolatis; ovario hirsuto, 13–15-ovulato; legumine . . . .

Suffrutex 2-pedalis, ramosus, ramis adscendentibus tomentellis, crassitie pennæ corvinæ. *Folia* imparipinnata, 5-foliolata v. superiora 3-foliolata, $1\frac{1}{2}$–2 poll. longa, foliolis oblanceolato- v. ovali-oblongis, obtusis v. retusis, utrinque breviter sericeo-pilosis, foliolo terminali lateralibus sæpius longiore, 1–$1\frac{1}{4}$ poll. longo; petiolo communi $\frac{1}{6}$–$\frac{2}{3}$ poll. longo, petiolulis brevissimis. *Stipulæ* subulatæ, $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Racemi* terminales, erecti, folia superantes, multiflori, pilosi. *Bracteæ* lanceolato-subulatæ, $\frac{1}{4}$–$\frac{1}{3}$ poll. longæ, deciduæ. *Pedicelli* $\frac{1}{20}$–$\frac{1}{12}$ poll. longi. *Flores* $\frac{1}{2}$ poll. longi. *Calyx* pilosus, 2-labiatus, labio superiore 2-fido, lobis triangulari-lanceolatis, acutis, labio inferiore 3-fido, lobis labio superiore longioribus, lanceolatis, acutis. *Corolla* calyce 2-plo longior, petalis subæqualibus; vexillum rotundatum, breviter unguiculatum, basi inappendiculatum; alæ obtusæ, unguiculatæ, lamina basi auriculata; carina obtusa. *Stamina* monadelpha; stamen vexillare basin versus filamento connato; antheræ uniformes, oblongo-ellipticæ. *Ovarium* dense hirsutum, 13–15-ovulatum; stylus complanatus, incurvus; stigma capitellatum. *Legumen* non vidi.

Hab. Karagué, alt. 5000 ft., Dec. 1861, *Col. Grant!*

This is the *Eriosema* sp. no. 3 of App. Speke's Journ. 632. It has been omitted by Mr. Baker in the Tropical African Flora.

Plate XXXII. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. 6. Detached filament and anther; fig. 7. Ovary and calyx.

32. Sesbania ægyptiaca, Pers.; DC. Prod. ii. 264; Baker, in Fl. Trop. Afr. ii. 134; Wight, Ic. t. 32.

Hab. Madi, Dec. 1862, *Col. Grant!* Extends from West Africa eastward, through Tropical Africa, to Australia.

[Native name "maweengo-weengo." Tree: trunk 30 inches in circumference. Patches of it grow also as bushes near water. Branches numerous, 8 to 10 feet long, straight, and of uniform thickness. Flowers yellow. Pods 8 to 10 inches long, and flat. The seeds rattle in the ripened pod, and the natives shake the tree to hear the sound. They also put the seeds into a gourd, and use this as a rattle when herding cattle.—J. A. G.]

33. Astragalus venosus, Hochst. in hb. Schimp. Abyss. No. 190; A. Rich. Fl. Abyss. i. 193; Baker, in Fl. Trop. Afr. ii. 137.

Hab. Uganda, fruit July, 1862, *Col. Grant!* Also in Abyssinia.

34. Alhagi Maurorum, Desv.; DC. Prod. ii. 352; Baker, in Fl. Trop. Afr. ii. 142.

Hab. Very common in waste ground about Thebes &c., *Col. Grant!* A common desert plant.

[Eaten greedily by camels.—J. A. G.]

35. Herminiera Elaphroxylon, Guill. et Perr. Fl. Seneg. 201, t. 51; Baker, in Fl. Trop. Afr. ii. 144.—*Ædemone mirabilis*, Kotschy, in Œstr. Bot. Monatschrift, No. 4 (1858), cum tab.

Hab. Upper Nile, 3° to 8° N. lat., *Col. Grant!* Widely distributed in Tropical Africa.

[The "ambach." Its growth is so rapid that in three years it choked the proper channel of the river "Bahr Gazelle." The natives use its light logs to assist them in swimming across the Nile.—J. A. G.]

36. Æschynomene Schimperi, Hochst. in hb. Schimp. Abyss. No. 202; A. Rich. Fl. Abyss. i. 202; Baker, in Fl. Trop. Afr. ii. 146.

Hab. By the Nile, Nov. 1862, *Col. Grant!* This is a form of the Abyssinian plant, from which it may possibly prove distinct when more ample material shall have been obtained.

[Native names "m'pæpæ" (Kis.), also "kong-gōlo" (Kin.). A wide-spreading-branched tree, 20 feet high, in or by water at Unyoro, with the *Papyrus*. The bark of a branch was marked with burst blisters and lines, and was of a dull rusty-brown colour. Small knots show upon a log of it. The wood is white, and streaked with black longitudinally. It is so remarkable for lightness, that I measured a log 4½ feet long and 15 inches in mean circumference, and it weighed only two and a half pounds. It is a most useful wood to the inhabitants, as they make floats, levers for carrying their loads, blocks to cut upon, bolts for their doorways; and for shields no wood can equal it in toughness and lightness, two qualities requisite in the shield of the Waganda people. It would make admirable sun-hats.—J. A. G.]

37. Æschynomene indica, Linn.; DC. Prod. ii. 320; Baker, in Fl. Trop. Afr. ii. 147; Wight, Ic. t. 405.

Hab. Unyoro, Sept. 1862, *Col. Grant!* Widely spread in Tropical Africa and Asia.

[Native name "m'neenge" (Zanzibar). Plentiful everywhere: at 5° S. lat., in the dry season (September), its dead stem was prostrate on the dried mud; but at 2° N. lat., in the same month, it was in leaf and fruit. Though only growing straight to 6 or 7 feet high, the thickest part of the stem measures large in proportion, 16 inches in circumference.—J. A. G.]

38. Smithia capitulifera, Welwitsch; Baker, in Fl. Trop. Afr. ii. 152. Annua v. biennis, diffusa, ramosa, sparsim patenter setosa; foliis 12–18-foliolatis, foliolis oblongis, rigidulis; stipulis parvis, basifixis, subulatis v. lanceolatis, acuminatis, nervosis; floribus in capitulis multifloris, bracteatis, terminalibus, congestis, breviter pedicellatis; calyce 4-fido corolla paullo breviore; ovario 2-ovulato.

Herba v. *suffrutex* diffusus ramosus, ad 1 ped. alt., ramulis subelongatis, setis patentissimis sparsis obsitis. *Folia* pinnata, $\frac{1}{2}$–$\frac{3}{4}$ poll. longa, petiolo communi setigero, foliolis 12–18, oblongis, obliquis, obtusiusculis v. oblique acutatis, integris v. apice denticulatis, glabris v. setulas paucas gerentibus, nervulo excentrico, $\frac{1}{6}$–$\frac{1}{4}$ poll. longis, sessilibus. *Stipulæ* acuminatæ, basi petiolo adnatæ, $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Capitula* terminalia, multiflora, $\frac{1}{2}$–1 poll. lata, bracteata; bracteæ rigidulæ, ovatæ v. ellipticæ, acutæ, setoso-ciliatæ, pedicellum æquantes; bracteolæ ad apicem pedicelli, primum calycem æquantes. *Calyx* 4-fidus, labio superiore ovato-lanceolato, breviter bifido, lobulis acutis, lobis 2 lateralibus ovato-ellipticis, lobo inferiore conduplicato, omnibus oblique longitudinaliter nervosis et setuloso-ciliatis. *Corolla* calycem paullo su-

perans; petala subæqualia; vexillum obovatum subsessile; alæ oblongæ, obtusæ. *Stamina* monadelpha; antheræ uniformes, minutæ, rotundatæ. *Ovarium* medio constrictum, biovulatum, glabrum.

Hab. Mininga, 4° 18′ S. lat., March 1861, *Col. Grant!*

The same species was recognized in Dr. Welwitsch's Angolan herbarium by Mr. Baker, who describes the legume as sessile, with two articulations. I have not seen a ripe fruit.

Plate XXXIII. fig. 1. Leaflet; fig. 2. Flower; fig. 3. Vexillum; fig. 4. Ala; fig. 5. Carina; fig. 6. Staminal sheath; fig. 7. Pistil.

[39. Arachis hypogæa, Linn. Cultivated to a small extent from 7° S. to 2° N. lat. The roots are eaten roasted and pounded into flour, or an oil is extracted from them.—J. A. G.]

40. Zornia diphylla, Pers. Syn. Pl. ii. 318; Baker, in Fl. Trop. Afr. ii. 158.

Hab. Unyoro, August 1862, *Col. Grant!* Widely diffused in hot countries of both hemispheres.

[Growing in tufts in dry ground.—J. A. G.]

41. Pseudarthria Hookeri, Wight et Arn. Prod. Fl. Ind. Or. 209; Baker, in Fl. Trop. Afr. ii. 168.

Hab. Karagué, Feb. 1862, and Unyoro, August to November 1862, *Col. Grant!* Also in Angola, Mozambique, Natal, and India.

[An erect-growing rather woody plant, 7 to 9 feet high. Calyx brown; corolla brown; the pods, with ten flat oblong seeds, are very sticky and hairy. Plentiful in the grassy forest-countries of Karagué and Unyoro. Flowers February; ripe August.—J. A. G.]

42. Uraria picta, Desv.; DC. Prod. ii. 324; Baker, in Fl. Trop. Afr. ii. 169.

Hab. Rocky soil near Madi village, Dec. 1862, *Col. Grant!* Common in the Old-World tropics.

[A foot high. The stems of previous years are grey and woody, the present stems are filed reversely. The centre of each leaflet is marked irregularly with white; calyx pink; corolla of an indigo-blue white colour. Each cell of the pod is inflated.—J. A. G.]

43. Alysicarpus rugosus, DC. Prod. ii. 353; Baker, in Fl. Trop. Afr. ii. 171.—*Alysicarpus Wallichii*, Wight et Arn. Fl. Prod. Ind. Or. 234; App. Speke's Journal, 631. Var. γ. *A. Quartinianus*, A. Rich. Fl. Abyss. i. 208. To this last variety Mr. Baker refers Col. Grant's specimen.

Hab. Karagué, Feb. 1862, *Col. Grant!*

[Straight hairs lie flatly upon the surface of the leaves. Calyx green, and tipped with brown hairs; corolla purple. The pods are marked across with bars; one variety had a line of hairs growing upon one side of its branches; no hairs upon the surfaces of the leaves. I suffered from a swollen limb, and the natives applied this plant mashed with *Calophanes radicans*. The water was softened, and the application was soothing and did no harm.—J. A. G.]

44. Pisum sativum, Linn.; DC. Prod. ii. 368.

Hab. Gathered at Karagué, Feb. 1862, *Col. Grant!* The common cultivated garden pea.

[We found this abundantly cultivated at Karagué, alt. 4500 feet. Ripe in February.—J. A. G.]

45. Abrus precatorius, Linn.; DC. Prod. ii. 381; Baker, in Fl. Trop. Afr. ii. 175.

Hab. Ukuni, 4° S. lat., September 1861, *Col. Grant.* I have not seen a specimen. The plant is common throughout the tropics.

46. Abrus Schimperi, Hochst. in hb. Schimp. Abyss. No. 1552; Baker, in Fl. Trop. Afr. ii. 175.

Hab. Woods, Madi, fruit Dec. 1862, *Col. Grant!* Occurs also in Abyssinia and Nubia.

[The Zanzibar men eat its roots boiled in grain as a cure for swollen testicles. Vomiting is said to ensue. Plentiful in Uganda, where the king's officers wear wreaths of its scarlet seeds.—J. A. G.]

47. Teramnus labialis, Spreng. Syst. Veget. iii. 235; Baker, in Fl. Trop. Afr. ii. 180.—*Glycine labialis*, Wight et Arn.; Speke, Journ. App. 631.

Hab. Common, Unyoro, *Col. Grant!*

Col. Grant's plant differs from the ordinary form of *T. labialis* in the remarkably contracted racemes, the flowers being reduced to an axillary fascicle, and in the appressed hirsute legumes, the latter resembling rather those of some forms of the New-World *T. uncinatus*, Sw.

[A slender climbing plant, growing on the Unyoro plateaux. In pod in November.—J. A. G.]

48. Erythrina tomentosa, R. Br. in Salt, Abyss. App.; A. Rich. Fl. Abyss. i. 213; Baker, in Fl. Trop. Afr. ii. 184.

Hab. Karagué, February 1862, *Col. Grant!*

As Mr. Baker remarks (*l. c.*), this may prove to be a mere tomentose form of *E. abyssinica*, A. Rich. Fl. Abyss. i. 214, t. 41 (*Chirocalyx abyssinicus*, Pl. Tinn. t.3), in which case, if Lamarck's name be rightly applied, it must take precedence.

[Shrub, with mouldy stem. Thorns short, thick, downy, and slightly curved down. The outer leaf of the three is turned up by a twist in its petiole. Flowers of a handsome scarlet; at the bases of the stamina there are four rose-coloured leaflets encircling and protecting them.—J. A. G.]

49. Canavalia ensiformis, DC. Prod. ii. 404; Baker, in Fl. Trop. Afr. ii. 190.—*C. gladiata*, DC. *l. c.*

Hab. On the Nile at Chopeh, November 1862, *Col. Grant!* Common throughout the tropics.

[Flowers of a rose-pink colour, waxy and sweet-scented. Twines amongst grasses. The people amuse themselves at a game with its bean-like seeds, which they spin upon their wooden stools.—J. A. G.]

50. Phaseolus lunatus, Linn.; DC. Prod. ii. 293; Baker, in Fl. Trop. Afr. ii. 192.

Hab. Kazeh, 5° S. lat., *Col. Grant!* Common throughout the tropics.

51. Phaseolus Mungo, Linn.; DC. Prod. ii. 394. Was met with in cultivation, 5° S. lat., but I have not seen specimens.

[A nutritious grain, sown in ridges with Indian corn at Ukuni.—J. A. G.]

52. Vigna nilotica, Hook. fil. Fl. Nigrit. 311; Baker, in Fl. Trop. Afr. ii. 204.

Hab. Karagué, March 1862 (*V. luteola* of App. to Speke's Journ.), and banks of M'gæta, 7° 20′ S. lat. (*Vigna* sp. 2 of App.), *Col. Grant!* "Known principally or entirely under cultivation, and very doubtfully distinct from *V. luteola*" (J. G. Baker, *l. c.*).

[Native name "koondeh." Flowers yellow. Seeds like white peas, with black where attached to the pod. The natives at 2° N. lat. dry its leaves like the tobacco-leaf, and then eat them as a vegetable. Spread all over the country.—J. A. G.]

53. Psophocarpus longepedunculatus, Hassk. Pl. Jav. 388; Baker, in Fl. Trop. Afr. ii. 208.

Hab. M'bwiga, alt. 1350 ft., 7° 24′ S. lat., *Col. Grant!* Cultivated throughout the tropics.

54. Dolichos Lablab, Linn. Sp. Pl. 1019; Baker, in Fl. Trop. Afr. ii. 210, Bot. Mag. t. 896.

Hab. Karagué and Unyoro, *Col. Grant!* Cultivated throughout the tropics.

[Native name "gueenguezo" and "maharageh." Surface of the plant purple and glossy, and covered with fine down. Corolla mauve-coloured. Seeds scarlet. A variety had pure white flowers, and grew like a bush. Its leaves are dried and eaten as a vegetable. The beans are also eaten, but not considered good, as they induce flatulency.—J. A. G.]

55. Dolichos biflorus, Linn.; DC. Prod. ii. 398; Baker, in Fl. Trop. Afr. ii. 210.

Hab. 6° 55′ S. lat., October 1860, *Col. Grant!* Common in Tropical Asia. Occurs also in West Tropical Africa.

56. Dolichos stenocarpus, Hochst.; A. Rich. Fl. Abyss. i. 224; Baker, in Fl. Trop. Afr. ii. 213.

Hab. Usui, November 1861, *Col. Grant!* Grows also in Abyssinia and Sennaar.

57. Dolichos? sp.—*Pachyrhizus* sp.? of App. Speke's Journ. 631: cited under *P. angulatus*, Rich., by Mr. Baker in Fl. Trop. Afr. ii. 208; identical also, I think, with *Tephrosia sericea*, Baker, *l. c.* 107.

Hab. Woods, Madi, January 1863, *Col. Grant!*

A remarkable plant, with virgate branches, attaining 4 ft. in height. The flowers are precocious, as in some curious species of *Dolichos* collected in Lower Guinea by Dr. Welwitsch; the leaves trifoliolate and stipellate. The stigma is penicillate, and not lateral and globose as in *Pachyrhizus*.

[When collected, in the woods of Madi, in January, it was in flower, but had no root-leaves.—J. A. G.]

58. Cajanus indicus, Spreng. Syst. Veg. iii. 248; Baker, in Fl. Trop. Afr. ii. 216.

Hab. Unyoro, July 1862. "Met with and cultivated everywhere," *Col. Grant!* Cultivated throughout the tropics.

["Baraz" the native name, a coarse-tasting pea. Its wood is used by the natives, along with a reed, as turning stick, to strike a light—J. A. G.]

59. Rhynchosia caribæa, DC. Prod. ii. 385; Baker, in Fl. Trop. Afr. ii. 220.—*R. minima* of App. Speke's Journ. 631.

Hab. Banks of the M'gæta, 7° 20′ S. lat., *Col. Grant!* In Tropical and Southern Africa and in America.

60. Rhynchosia viscosa, DC. Prod. ii. 387; Baker, in Fl. Trop. Afr. ii. 222.

Hab. Karagué, Dec. 1861, and Unyoro, November 1862, *Col. Grant!* Also in Tropical Asia.

The Karagué and Unyoro specimens differ in habit and relative length of calyx and corolla; but I am not sure of any specific difference between them.

61. Rhynchosia Grantii, Baker, in Fl. Trop. Afr. ii. 223. Prostrata v. volubilis, hirta; foliis trifoliolatis, foliolis ovali- v. oblanceolato-oblongis, obtusis, mucronatis; stipulis setaceis, erectis; floribus parvis, solitariis v. in axillis 2–3-natis subsessilibus; calycis labio superiore 2-fido, lobis ovatis acuminatis, labio inferiore lobis lanceolatis acuminatis; legumine breviter oblongo continuo, valvis setaceo-hirtis.

Caulis gracilis decumbens v. prostratus, pilis brevibus setulosis appresse deflexis hirtus. *Folia* breviter petiolata, trifoliolata, hirta; foliolis ovali-oblongis, obtusis v. obtusiusculis, mucronatis, centrali longiore, lateralibus brevissime petiolulatis, utrinque præcipue autem in pagina inferiore pilis subappressis bre-

vibus rigidulis hirtis, reticulatis, foliolo centrali $1\frac{3}{4}$–$2\frac{1}{2}$ poll. longo; petiolo communi $\frac{1}{3}$–$\frac{3}{4}$ poll. longo. *Stipulæ* setaceæ, erectæ, $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Flores* parvi, axillares, subsessiles v. brevissime pedicellati, sæpius gemini v. terni, $\frac{1}{6}$–$\frac{1}{3}$ poll. longi. *Calyx* labio superiore bifido, lobis brevibus ovatis, acutis, labio inferiore trifido, lobis lanceolatis acuminatis. *Corolla* . . . . . *Legumen* 1–2-spermum, oblongum, oblique apiculatum, sessile, valvis setigeris; $\frac{1}{2}$–$\frac{3}{4}$ poll. longum, $\frac{1}{4}$ poll. latum.

Hab. Unyoro, *Col. Grant!* We have but a single specimen in fruit.

[This plant, found in the grassy plateaux of Unyoro, resembles the "doll" of India.—J. A. G.]

62. Eriosema parviflorum, E. Meyer, Comm. Pl. Afr. Austr. 130; Baker, in Fl. Trop. Afr. ii. 225.

Hab. Karagué, *Col. Grant!*

[A plant growing near water, of a peculiarly pale green all over.—J. A. G.]

63. Eriosema flemingioides, Baker, in Fl. Trop. Afr. ii. 229. Fruticosum, ramis flexuosis tomentosis; foliis trifoliolatis, foliolis amplis ellipticis, obtusis v. breviter apiculatis, subtus pubescenti-tomentosis; racemis axillaribus, folio brevioribus v. æquilongis, primum strobiliformibus; bracteis ovato-lanceolatis, imbricatis, ferrugineo-pilosis, deciduis; floribus subsessilibus; calyce 5-fido, lobis 2 posterioribus brevioribus subconniventibus, 3 inferioribus lanceolatis acutis, antice paullo longiore; legumine oblongo-elliptico, ferrugineo-villoso.

Frutex, ramis flexuosis, breviter fulvo-tomentosis, internodiis 1–$2\frac{1}{2}$ poll. longis. *Folia* trifoliolata, petiolata, foliolis late ellipticis v. lateralibus oblongo-ellipticis, obtusis, breviter apiculatis, basi plus minus rotundatis, in pagina superiore brevissime velutino-puberulis deinde glabratis, in inferiore tomentellis, costa et nervis lateralibus numerosis (utrinque 15–20) ferrugineo-piloso-tomentosis; foliolo terminali 3–5 poll. longo, $2\frac{1}{2}$–$3\frac{1}{2}$ poll. lato, lateralibus paullo majore; petiolo communi 1–2 poll. longo, petiolulis $\frac{1}{12}$–$\frac{1}{8}$ poll. longis. *Stipulæ* ovatæ, acutæ, sericeo-pilosæ, $\frac{1}{3}$–$\frac{1}{2}$ poll. longæ; stipellæ subulatæ, 1–2 lin. longæ. *Racemi* axillares v. terminales, folio breviores v. æquilongi, subsessiles, primum strobiliformes, bracteis ovato-lanceolatis, acuminatis, fulvo-sericeo-pilosis, intus glabris, dense imbricatis; bracteæ $\frac{1}{2}$–$\frac{3}{4}$ poll. longæ, caducæ. *Flores* subsessiles, $\frac{1}{2}$ poll. longæ. *Calyx* pilosus, 5-fidus, lobis acutis, anteriore lanceolato, 2 posterioribus brevioribus subconniventibus. *Corolla* calyce 3–4-plo longior; vexillum obovatum, latiuscule unguiculatum, ungue concavo, lamina basi 2-auriculata, dorso tenuiter pubescente; alæ unguiculatæ, oblanceolato-oblongæ, carina æquilongæ. *Stamina* diadelpha. *Ovarium* longe hirsutum, basi angustatum; stylus filiformis elongatus, superne glaber; stigma minutum, capitellatum. *Legumen* sessile, compressum, late ellipticum obtusum, breviter apiculatum, valvis fulvo-tomentellis et cum pilis longis laxisque obsitis, sæpius dispermum.

Hab. Madi, Dec. 1862, *Col. Grant!*

Plate XXXIV. fig. 1. Flower; fig. 2. Vexillum; fig. 3. Ala; fig. 4. Carina; fig. 5. Staminal sheath; fig. 6. Pistil; fig. 7. Fruit.

64. Dalbergia melanoxylon, Guill. et Perr. Fl. Seneg. 227, t. 53; Baker, in Fl. Trop. Afr. ii. 233.

Hab. Madi, Dec. 1862, *Col. Grant!* Also in Upper Guinea and Mozambique.

[Native names "m'pingo," "m'gembeh," "m'teendeea." Its wood is so hard that no insect can eat it. The tips of the natives' arrows are made of it; also wooden hammers used in the manufacture of bark-cloths; considered the very best firewood. Its roots are used as a cure for toothache. Flowers sweetly scented.—J. A. G.]

65. Lonchocarpus laxiflorus, Guill. et Perr. Fl. Seneg. i. 226; Baker, in Fl. Trop.

Afr. ii. 242.—*Philenoptera Kotschyana*, Fenzl, in Flora, 1844, 312. *P. Schimperiana*, Hochst. in hb. Schimp. Abyss. No. 1768 and 1778.

Hab. Madi, January 1863, *Col. Grant!* No. 743 of App. Speke's Journ. 632.

[Native name "mowāleh" (Kin.). Shrubby tree; in full blossom during January at Madi. Flowers lilac-coloured and scented.—J. A. G.]

66. Lonchocarpus violaceus, H. B. et K.—*Capassa violacea*, Klotzsch, in Peters, Mosamb. Bot. 28, t. 5. *L. philenoptera*, App. Speke's Journ. 632, not of Benth.

Hab. 7° S. lat., *Col. Grant!*

Mr. Baker, in Fl. Trop. Afr. ii. 242, unites the two preceding under *Lonchocarpus laxiflorus*; but I cannot help regarding the differences between them as specific. In *L. laxiflorus* (to which I agree with Mr. Baker in referring *L. philenoptera*, Benth., so far as north tropical specimens are concerned) the leaves are glabrous or very nearly so, the inflorescence generally or always terminating leafless twigs or the young leaves just unfolding, and the calyx-lobes are obtuse, the three anterior rotundate-ovate. In *L. violaceus* the leaves are closely hoary-tomentose on the under surface, the panicles terminate leafy ramuli, and the anterior calyx-teeth are lanceolate or lanceolate-deltoid.

[Tree, with 5 ft. circ. of stem. Flowers in handsome erect clusters, sweet-scented, and attractive to bees. Corolla white; bark grey. The tree has the general appearance of an ill-grown and thinly leaved ash. Not common.—J. A. G.]

67. Swartzia madagascariensis, Desv. in Ann. Sc. Nat. ix. 424; Baker, in Fl. Trop. Afr. ii. 257.—*S. marginata*, Benth.; App. Speke's Journ. 632.

Hab. Madi, February 1863, *Col. Grant!* Widely spread in Tropical Africa. I have only seen a leafy twig, without flower or fruit, in Col. Grant's collection.

[Ordinary-sized tree. Flowers yellow from the tips of the branches. Pods round, yellow, shiny, and downed. Native name "m'nyembeh."—J. A. G.]

68. Cordyla africana, Loureiro; DC. Prod. ii. 521; Baker, in Fl. Trop. Afr. ii. 257.—*C. Richardi*, Planch.; App. Speke's Journ. 632.

Hab. Six miles south of Gondokoro, *Col. Grant!* Also in Upper Guinea and Mozambique.

[Tree: trunk 12 feet in circumference; partly in flower and unripe fruit in February at 5° N. lat. Fruit now the size of a large walnut. Gum in deep-red bosses upon the trunk.—J. A. G.]

69. Cæsalpinia pulcherrima, Sw. Obs. 166; Oliver, in Fl. Trop. Afr. ii. 262.—*Poinciana pulcherrima*, Linn.

Hab. Zanzibar. Probably of Asiatic origin; now cultivated throughout the tropics.

70. Parkinsonia aculeata, Linn.; DC. Prod. ii. 486; Oliver, in Fl. Trop. Afr. ii. 267.

Hab. Gondokoro, introduced. Used as fencing, *Col. Grant!*

71. Cassia occidentalis, Linn.; DC. Prod. ii. 497; Oliver, in Fl. Trop. Afr. ii. 274.

Hab. Banks of the Nile, April 1863, *Col. Grant!* Widely diffused through tropical countries.

72. Cassia Tora, Linn.; Oliver, in Fl. Trop. Afr. ii. 275.—*C. obtusifolia*, Linn.

Hab. Unyoro, *Col. Grant!* Generally diffused throughout the tropics.

[The leaflets are clammy on their surface; and they close at night *backwards*, making the straight red gland at their junction very conspicuous.—J. A. G.]

73. Cassia didymobotrya, Fresenius, in Flora, 1839, 53; Oliver, in Fl. Trop. Afr. ii. 276.

Hab. Madi, Feb. 1863, *Col. Grant!* Occurs also in Abyssinia, Mozambique, and Angola.

[A bush, with outspreading branches, 5 to 6 feet high. Bark of branches shiny. Foliage a sombre-green colour; flowers yellow; pods black. Native name "m'cækæs'æ." Seen as fencing.—J. A. G.]

74. Cassia obovata, Colladon; Oliver, in Fl. Trop. Afr. ii. 277.

Hab. Khartoum, *Col. Grant!* Widely spread in Tropical Africa, extending eastward into India.

[Saw its leaves being gathered at Khartoom, 15° N. lat., in March, when it was in full pod. It grows abundantly here upon the sand-covered fields.—J. A. G.]

75. Cassia acutifolia, Delile; Oliver, Fl. Trop. Afr. ii. 278.

Hab. Sandy fields, Khartoum, March 1863, and (variety with broader puberulous leaflets) near Korosko, 16½° N. lat., *Col. Grant!* Grows from Sennaar and Kordofan westward to Timbuctoo.

[This species was also being gathered, but not to the same extent as *C. obovata*.—J. A. G.]

76. Cassia (§ Chamæcrista) Grantii, Oliver, in Fl. Trop. Afr. ii. 279. Diffusa; ramulis puberulis; foliolis 4–7-jugis, latiuscule oblongis, obtusissimis, mucronatis, glabratis, venulis oblique divergentibus, petiolo communi glandulas 1–3 stipitatas basin versus gerente; pedicellis solitariis geminisve; sepalis exterioribus ovali-oblongis apiculatis, interioribus ellipticis obtusis; staminibus 10 antheriferis; legumine lineari recto pubescente.

Caules e basi perenni, diffusi v. decumbentes, ½–1 ped. longi, puberuli v. sparse pubescentes. *Folia* abrupte pinnata, 1–2 poll. longa; foliolis sessilibus late oblongis, obtusissimis v. retusis, mucronulatis, basi valde obliquis, glabris v. glabrescentibus, costa basi excentrica, venulis oblique adscendentibus; petiolo communi tenuiter pubescente v. puberulo, basin versus v. inter juga glandulas stipitatas 1, 2 v. 3 gerente. *Stipulæ* lanceolatæ, acuminatæ v. subulatæ, nervosæ, erectæ, ⅙–¼ poll. longæ. *Pedicelli* supraaxillares, solitarii, gemini v. terni, pubescentes, basi bracteis stipuliformibus stipati, apicem versus bracteolis 2 subulatis instructi, 1–1¼ poll. longi. *Sepala* 4–5 lin. longa, exteriora ovali-oblonga apiculata, interiora elliptica obtusa. *Petala* ½ poll. longa. *Stamina* 10, ommia fertilia; antheræ uniformes, lineares, curvatæ; filamenta brevissima. *Ovarium* pilosum. *Legumen* lineare, rectum, compressum, apiculatum, 8–10-spermum, valvis pubescentibus; 1½ poll. longum, ⅙–⅕ poll. latum.

Hab. M'bwiga, alt. 1200 ft., Oct. 1860, *Col. Grant!* Found also in the Maravi country, near Lake Nyassa, and (var. *pilosula*) in Angola.

[Small herbaceous plant, abundant in the above locality only. In flower and fruit October 1860.—J. A. G.]

Plate XXXV. fig. 1. Leaflet; fig. 2. Calyx and pistil; fig. 3. Stamen.

77. Cassia (§ Chamæcrista) falcinella, Oliver, in Fl. Trop. Afr. ii. 281. Suffrutescens; caulibus ramosis hirto-pilosis; foliolis 8–11-jugis, rigidis, superioribus minoribus falcato-oblongis oblique apiculatis, costa margini superiori arcte approximata, venulis latere inferiore oblique adscendentibus validis; stipulis rigidis, ovato-lanceolatis, basi valde obliquis subcordatis; floribus solitariis geminisve axillaribus; sepalis acutissimis; staminibus 10 antheriferis; legumine lineari curvulo, compresso, pilosulo.

Caules 1–1½ ped. longi e basi ut videtur perenni adscendentes, plus minus distiche ramosi, pilis subpatentibus hirti. *Folia* ½–⅔ poll. longa, abrupte pinnata; foliolis rigidis, superioribus decrescentibus,

falcato-oblongis, oblique apiculatis ciliatis, costa margini superiori arcte approximata v. in foliolis infimis subcentrali, venulis paucis lateralibus oblique adscendentibus prominentibus; inferioribus ¼ poll. longis; petiolo communi hirto basin versus glandulis obscuris sessilibus ut videtur notato. *Stipulæ* erectæ, ovato-lanceolatæ, falcatæ, acuminatæ, longitudinaliter nervis validis percursæ, basi valde obliquæ subcordatæ, ¼ poll. longæ. *Pedicelli* axillares, solitarii v. gemini, pilosi, ½–¾ poll. longi, apicem versus bracteolis 2 subulatis instructi. *Sepala* subæqualia lanceolata, acutissima, dorso pilosula, ⅓ poll. longa. *Petala* calycem superantia v. æquantia. *Stamina* 10 inæqualia, omnia antherifera; antheræ lineares apice dehiscentes, subsessiles. *Ovarium* dense pilosum, 10–15-ovulatum. *Legumen* lineare, compressum, curvulum, valvis pilosulis, 1–1½ poll. longum, ⅙ poll. latum.

Hab. Karagué, 1862, *Col. Grant!* Entered with *C. mimosoides*, L. (no. 445), in App. Speke's Journ. 632.

[A foot high. Stem round, black-spotted and slightly haired. The stipules remain withered upon the stem when the leaves have fallen off. Calyx yellowish, downed, and brown at its tip; corolla yellow. Pod flat, hairy all over, and 1 to 2 inches long.—J. A. G.]

Plate XXXVI. fig. 1. Leaflet; fig. 2. Flower, front view; fig. 3. The same, from the back; fig. 4. Stamen; fig. 5. Pistil.

78. Cassia mimosoides, Linn.; Oliver, in Fl. Trop. Afr. ii. 280.

Hab. Unyoro, Oct. 1862, *Col. Grant!* Very common in the Old-World tropics.

79. Bauhinia reticulata, DC. Prod. ii. 515; Oliver, in Fl. Trop. Afr. ii. 290, where I give fuller synonymy.—*B. Thonningii*, Schum. & Thonn. Pl. Guin. 203. Figured in Guill. et Per. Fl. Seneg. t. 60.

Hab. Unyoro, Oct. 1862 (a single leaf only), *Col. Grant!* Widely spread in Tropical Africa.

[Native names "m'keendambogo" and "keeteembee." Common brushwood of the forest. Leaf-surface shining green, underneath dull. Flowers scarlet. The pod has a rough exterior, is of a deep brown colour, and ⅛ inch thick; the seeds, when ripe, shake within this hard substance. The bark affords short ropes; and the leaves are used for covering sores.—J. A. G.]

80. Afzelia cuanzensis, Welwitsch, Apont. Phyto-geogr. No. 35; Oliver, in Fl. Trop. Afr. ii. 302.—*A. Petersiana*, Klotzsch, in Peters, Mossamb. Bot. 19.

Hab. Usekhe, alt. 3700 ft., 6°–7° S. lat., *Col. Grant!* Occurs westward to Angola.

[Native name at 5° S. lat. "meekola;" at Madi, 3½ N. lat., where it is abundant on the rocky ground, it is called "mælee." The outer bark is light-coloured and scales off; a brown gum exudes from wounds; this, when soft, is tasteless, and easily dissolves in the mouth. The trunk measures 9 to 14 feet at its greatest circumference, branches at 11 to 25 feet from the ground; and the boughs are thick and tortuous. Its general appearance is that of a fine umbrageous tree, with round outline, and 50 feet high. The upper surface of the leaves shines, and is of a dark green colour; the under surface is pale and dull. The flowers have a rich perfume, somewhat like jasmine. Calyx pale green; corolla pink-green, and streaked with blood-red inside. The pod is flat, like a cigar-case, 6 by 2 or 7 by 3 inches, and deep brown outside. The six to twelve round long seeds, generally worm-eaten, are imbedded in a substance like white satin; they are black, shining, and the inner third of their length is covered with a waxy, red substance. The pods burst while upon the tree. The natives consider its timber valuable; they make their largest doors, their drums, quivers, and pipe-bowls of its wood, which takes a high polish, and resembles pale mahogany. The young leaf-shoots, purple-tinted, are eaten, like our spinach, by the people of the country.—J. A. G.]

81. Tamarindus indica, Linn.; DC. Prod. ii. 488, Bot. Mag. 4563 (*T. officinalis*, Hook.); Oliver, Fl. Trop. Afr. ii. 308.

Hab. Usagara, alt. 2700 ft., 6° 46′ S. lat., December 1860, *Col. Grant!* Widely distributed; wild or cultivated in Tropical Africa, and cultivated both in India and Tropical America.

[This was not common upon our route, but seen at 6° S., 3° S., and 2°–3° N. lat. Native name "looquajoo." Fruits in September. The natives do not object to the fruit.—J. A. G.]

82. Detarium senegalense ?, Gmelin; Oliv. Fl. Trop. Afr. ii. 313 (*seed only*).

["Boo-too" is the name given to the large stone of a plum-tree growing in Madi. The stones were found upon the pathway, and were unknown to our followers. They are the size and shape of our halfpenny-piece, but the eighth of an inch in thickness; and one side is broad, the other sharper. The stone is very hard, and covered with the same markings as the stone of our peach. The kernel is large, brown, hard, with shining surface.—J. A. G.]

83. Brachystegia spicæformis, Benth. in Linn. Trans. xxv. 312; Oliver, in Fl. Trop. Afr. ii. 306.

Hab. Robeho, alt. 4700 ft., 6° 38′ S. lat., December 1860, *Col. Grant!*

Identified, as var. *parviflora*, with an Angolan plant collected by Dr. Welwitsch. This is the "*novum genus*," near *Copaifera*, of Thomson in App. Speke's Journ. 633.

[Native name "m'chenga" or "m'nenga," a small tree with graceful breezy foliage, growing upon the hills on the east-coast range, and also at 3° S. lat. Its bark is made into cylinders for holding grain, and also for kilts, cloths, roofing, &c.—J. A. G.]

84. ? Brachystegia tamarindoides, Welwitsch; Benth. in Linn. Trans. *l. c.*; Oliver, in Fl. Trop. Afr. ii. 307.

Hab. 5° 5′ S. lat., 32°–33° E. long., alt. 4100 ft., *Col. Grant!* A single leaf only, which may or may not be identical with Dr. Welwitsch's Angolan plant.

[Native name "meeombo," a first-class tree, as it has so many uses. Tree fifty feet high; long, naked trunk 9 feet in circumference. Foliage deep green. The wood is considered good for building. Its bark, after being boiled and prepared, is made into white sheets or cloths worn by the natives at 10° S. They also make canoes, boxes, matches, and ropes from it. Its honey is considered very superior in flavour and whiteness. First met with thirty miles from the sea; afterwards in the interior it was frequent. It is so plentiful at 6° S. lat. that our temporary huts were roofed with its bark, and my plants were protected by planks of its bark, which answered admirably, being light and stiff.—J. A. G.]

85. Dichrostachys nutans, Benth. in Hook. Journ. Bot. iv. (1842) 353; Oliver, Fl. Trop. Afr. ii. 333.

Hab. Banks of Nile, Nubia, and (a form with ample leaves and leaflets 5–6 lines long) 6° 46′ S. lat., alt. 4700 ft., *Col. Grant!* Spread widely through Tropical Africa.

[Its flowers, when freshly blown, are very beautiful, being bottle-brush shape, one half of a rose-pink colour, and the rest a lemon-yellow.—J. A. G.]

86. Mimosa asperata, Linn.; Oliver, in Fl. Trop. Afr. ii. 335.

Hab. Madi, Dec. 1862, *Col. Grant!* Widely distributed in the New-World tropics and in Africa.

[Native name "logogōnee." Flowers rose-pink colour. Everywhere in marshes. Branches grow flatly.—J. A. G.]

87. Acacia albida, Delile, Fl. d'Egypte, 142, t. 52. fig. 3; Oliver, in Fl. Trop. Afr. ii. 339.

Hab. Nubia, March 1863 (without fl. or fruit), *Col. Grant!*

[Native name "haraz." A remarkably bushy tree, with trunk 8 feet in circumference; branches much contorted; the younger ones have white bark, others black. Its leaves are eaten by goats, and the bark is used in curing leather. The natural outline of this tree is that of an umbrella. The ripe pods curl very much, are glossy, and of a dull red-yellow colour. Never met with till we reached 15° N. lat.; but our men had seen it at Ulolee and Rukwa, in 7° S. lat. In Nubia there is a place on the Blue Nile called after this tree, "Aboo-Haraz."—J. A. G.]

88. Acacia catechu, Willd.; Benth. in Hook. Lond. Journ. Bot. i. (1842) 510; Oliver, in Fl. Trop. Afr. ii. 344.

Hab. Nile banks, March 1863, and Madi, Feb. 1863 (in leaf only), *Col. Grant!* Also in Abyssinia and Zambesi-land, and common in India.

[Native name "m'wombweh." Stem 20 to 30 inches in circumference. Bark yellow and scales off. Thorns are black and hard as iron; they are the worst I saw in Africa. Pods red. This is the only tree to be met with upon the left bank of the Nile at 9° N. lat. From a distance it looks flattish-topped.—J. A. G.]

89. Acacia hecatophylla, Steud.; A. Rich. Fl. Abyss. i. 242; Oliver, in Fl. Trop. Afr. ii. 344.

Hab. Madi (No. 755, and *Acacia* nos. 9 & 10, of App. Speke's Journ. 633). Also in Abyssinia.

[Native name "m'foomtamvool'ah." A handsome, graceful tree, with terminal, erect, jasmine-scented white flowers. Trunk 30 inches in circumference. The pod is shining, smooth, and much veined. The leaves are in bunches or tufts beneath the flowers. The natives steam their eyes and wash their faces with an infusion from its roots. This is one of their cures for ophthalmia.—J. A. G.]

90. Acacia pennata, Willd.; Benth. in Hook. Lond. Journ. Bot. i. (1842) 516; Oliver, in Fl. Trop. Afr. ii. 345.

Hab. Ugogo, Marenga M'khali, November 1860, *Col. Grant!* Widely spread in Africa and Tropical Asia.

[Flowers in November at 6° S. lat. They are yellow and powerfully scented.—J. A. G.]

91. Acacia Sieberiana, DC. Prod. ii. 463; Oliver, in Fl. Trop. Afr. ii. 347.

Hab. Madi, December 1862, *Col. Grant!* Widely distributed in Tropical Africa, especially north of the equator.

[Found at 3° N. lat., and again at 18° N. lat., where it was in flower in April. Tree 10 feet in circumference of trunk. Its flowers extremely rich in scent. Native name "m'salla." Ropes are obtained from the bark.—J. A. G.]

92. Acacia arabica, Willd. Sp. Plant. iv. 1085; Oliver, in Fl. Trop. Afr. ii. 350.

Hab. Shiluk country, March 1863, *Col. Grant!* Common in Africa, extending eastward through Afghanistan into India.

[The largest trees I measured were 8 and 12 feet in circumference of stem, and grew upon high and dry ground, at 10° N. lat., on the Nile. We came upon a forest of them at 12° N. lat.; but, being almost in the water, they were not so thriving, and seldom grew straight. Again, we met with them at 28° N. lat., but observed them nowhere in Central Africa. Bark deep black, closely striated. Out-

line of the foliage round and handsome. The pods are full of a brown crisp gum, which exudes from wounds in the trees. Native name "soonud" in Nubia. The Nubians and Egyptians collect its pods for dyeing their cloths a dingy yellow. Our boat on the Nile was made of its wood; and we saw boat-building at 12° by a forest of this tree. Though the wood is tough and cross-grained, it is said not to last. We heard that at Muscat the people pound its seeds, mix them with dates, and make an intoxicating drink.—J. A. G.]

93. ACACIA SEYAL, Delile, Fl. d'Egypte, 142, t. 52. fig. 2; Oliver, in Fl. Trop. Afr. ii. 351.

Hab. Plentiful about 9° N. lat., March 1863, and 18° by the Nile, April 1863, *Col. Grant!* Common north of the equator in Tropical Africa, and also occurring in Zambesi-land.

[Forests of this tree, growing at 9° to 10° N. lat. upon the left bank of the Nile, were in flower and fruit in March. They are the size of a large apple-tree, and had the red-stemmed parasite *Loranthus acaciæ* growing upon it. The trunk and branches have no asperities upon them; but they are covered with a powder of an indian-red colour, perhaps from the above parasite, which conceals the apple-green-coloured soft bark. The trees grow rather flat-topped, from, I imagine, the weight of the fruit and the tenderness of the shoots. Elephants are very destructive here to these trees; for they knock them down to get at the pods. The gum is of a bright amber-colour, and flows freely from all wounds. When it dries it becomes white and brittle, like dried crumbs of bread. The botanical name coincides with the native name "m'salla."—J. A. G.]

94. ACACIA STENOCARPA, Hochst.; A. Rich. Fl. Abyss. i. 238; Oliver, Fl. Trop. Afr. ii. 351.

Hab. Madi, December 1862 (No. 677), and perhaps also Karagué, December 1861 (No. 384, in fl. only), *Col. Grant!* Found in Nubia and Abyssinia.

[Native name "m'ceekeezzee." The bark of this bush is of a pale hazel-bark colour and scales off. Flowers orange-yellow colour and sweetly scented. Its thorns have black tips. We made ropes from its inner bark, by beating off the outer bark with stones and using the inner.—J. A. G.]

[95. ACACIA EBURNEA?, App. Speke's Journ. 633. Thirty feet high, with extraordinary outline of foliage; it is horizontal or slightly inclined, the branches growing flatly out like the yew tree. The thorns are an inch long, straight, white, and double. Met with only upon the steep slopes of the east-coast range, amongst boulders of igneous rock, at an altitude of 4700 feet, lat. 6° 38′ S.—J. A. G.]

[96. ACACIA sp., App. Speke's Journ. 633. M'goongwah (Kin.), a fine lofty tree, with hard, dark, heavy wood, and dark bark. Exudes gum in spots the size of marbles, and as bright as amber. Pods contorted, 10 by 1½ inches, thin as brown paper, and of a pale, dull, brick-red colour. Seeds (say ten) flat, shining, broadly ovate, and ¼ inch long. The natives, in speaking of its wood, say that it sinks in water, also that few men are strong enough to carry a log of it. They make hatchet-handles and bows with it.—J. A. G.]

97. ALBIZZIA LEBBEK, Benth. in Hook. Journ. Bot. iii. (1844) 87; Oliver, in Fl. Trop. Afr. ii. 358.

Hab. Planted, Khartoum, *Col. Grant!* Sent home also from Upper Guinea and various localities in Tropical and Subtropical Asia. Dr. Peters collected it in Mozambique.

[It is called "lubach,"=lebbek, by the people of Khartoom, where it flourishes about the Government buildings, and affords thick shade. The foliage is handsome. The flowers are out in April, and are richly scented. Its wood is considered useless for building-purposes.—J. A. G.]

98. Albizzia, sp. allied to *A. Lebbek*, but the specimen fragmentary and the determination uncertain.

[Native name "m'sangal'a." The specimen observed at Madi, in February, by the bed of a stream, was a young healthy tree in pod, and quite different from *Albizzia Lebbek*. Its bark was brown, and lined with black across it. This appearance, and the bending of its long smooth boughs, reminded me of our mountain-ash. No thorns. Leaves sensitive, deeply green, surfaces smooth, say nine pairs close together; no impressions upon them; at the points, on the main rib, below and between the petiole-junctions, there is a spot of a gland. The ripe pods are 8 by $1\frac{1}{2}$ inches, a yellow-brown colour, smooth as paper, thin, with pointed ends. Seeds flat, brown, considerable distances apart; an inner ring shows on them. The seed-stalk is curved. The inside of a dry seed is pea-coloured. Its wood is used in building.—J. A. G.]

99. Albizzia rhombifolia?, Benth. in Hook. Journ. Bot. iii. (1844) 87; Oliver, in Fl. Trop. Afr. ii. 358.

Hab. Madi, Feb. 1863. A single leaf only (No. 760), *Col. Grant!* The original specimens of this plant were from Senegambia.

[Native name "m'keendwanzægamba." Both the upper and the lower surfaces of the leaves are soft and downy as velvet; edges also downy. It is a small bushy tree at 3° N. lat. The natives at 5° S. lat. do not make any use of it.—J. A. G.]

100. Albizzia (Zygia) brachycalyx, Oliver, in Fl. Trop. Afr. ii. 361. Arborea; foliis bipinnatis, pinnis 4–7-jugis, foliolis 7–10-jugis late obovato- v. oblongo-ellipticis, petiolo glandulis sessilibus interjugalibus 2–3 instructo; pedunculis gracilibus fasciculatis axillaribus; floribus glabris, racemoso-umbellatis; calyce brevissimo corolla 5–6-plo breviore; tubo stamineo longe exserto, gracili; ovario lineari, glabro, subsessile, 7–10-ovulato.

Arbor 20–30-pedalis. *Rami* teretes, longitudinaliter striati, minute lenticellati, glabrati, innovationes puberulæ. *Folia* bipinnata, petiolo communi pubescente $1\frac{1}{4}$–$2\frac{1}{4}$ poll. longo, inter paria sæpe glandulam minutam sessilem gerente, pinnis 4–7-jugis; foliolis 7–10-jugis, late obovato- v. oblongo-ellipticis, obtusis v. oblique et latiuscule acutatis, subglabris, 4–5 lin. longis, 2–$2\frac{1}{2}$ lin. latis. *Pedunculi* axillares sæpius fasciculati, erecti, puberuli, $\frac{1}{2}$–$1\frac{1}{2}$ poll. longi; floribus glabris, apice umbellato-racemosis. *Pedicelli* $\frac{1}{12}$ poll. longi. *Calyx* breviter campanulatus, 5-dentatus, corolla 5–6-plo brevior. *Corolla* $\frac{1}{5}$–$\frac{1}{4}$ poll. longa, ore infundibuliformi, 5-fida, lobis ovato-lanceolatis, obtusiusculis. *Tubus* stamineus longe exsertus, gracilis, glaber, $\frac{3}{4}$–1 poll. longus, æstivatione plicatus; antheræ transverse oblongo-rotundatæ, minutæ, dorsifixæ. *Ovarium* lineare, compressiusculum, glabrum, subsessile, 7–10-ovulatum. *Legumen* non vidi.

Hab. Usui, Nov. 1861 (*Zygia* no. 205 in App. Speke's Journ. 634), *Col. Grant!*

[A tree from 20 to 30 feet high, with graceful foliage. Now, in November, honey-sucking birds hover over its flowers.—J. A. G.]

Plate XXXVII. fig. 1. Leaflet; fig. 2. Flower; fig. 3. Calyx and staminal tube cut through longitudinally; fig. 4. Stamens.

101. Albizzia (Zygia) sp.? Leaf only. Oliv. Fl. Trop. Afr. ii. 363.

[An immense tree, measuring 27 feet at its greatest girth, where the form of a horizontal section is that of a starfish; but higher up this angular form resolves into a round trunk. At 15 feet from the ground it begins to branch into massive boughs. In flower, leaf, and pod in November, at 7° S. lat. The flower hangs like a round pink tassel; and along with it there may be two pod-like pendants, which resemble leather straps or ribbons in being uniformly broad and very long. These pods are used by the natives for covering their poisoned arrows; they are lashed or bandaged round the poison. Leaves compound. Said to be a useless wood by one of our men, who recognized it as a Madagascar tree, and called it "m'koondee;" but boats and drums are made of this the largest-growing tree in Huao.—J. A. G.]

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6

CRASSULACEÆ.

1. BRYOPHYLLUM CALYCINUM, Salisb.; DC. Prod. iii. 396; Britten, in Oliv. Fl. Trop. Afr. ii. 390.

Hab. Madi, not in flower, *Col. Grant!*

[Very succulent plant, 2 feet high, growing in the shade of a huge tree in low ground at Madi. It was not in flower during December. The natives think it has some virtue; for they grow it in certain places, and call it "m'teloandeb'weh."—J. A. G.]

2. KALANCHOE, sp.—*K. glandulosa*, Hochst.; App. Speke's Journ. 635; referred to by Britten in Oliv. Fl. Trop. Afr. ii. 397. Not *K. glandulosa*; but, the only specimen being destitute of leaves, I am unable to name or describe it. Col. Grant's memoranda of the structure of the flower agree perfectly with the generic character.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[Fleshy plant, 4 feet high, in a dry ravine, Karagué hills. Stem decumbent and slightly downy; branches opposite, erect, bare, and leafy only near the ground; fleshy bracts beneath the branches; leaves 6 by 4 inches, smooth, very succulent, with crenate edges. Uncommon. Flowers in December at the above locality.—J. A. G.]

HAMAMELIDEÆ.

1. MYROTHAMNUS FLABELLIFOLIA, Welwitsch, Apont. Phytog. Angol. 578 (1858); Linn. Trans. xxvii. 23, tab. 8.—*Cliffortia* ? *flabellifolia*, Sond. in Flora Capensis, ii. 597. "*Planta exogena anomala dioica*," Thomson in App. Speke's Journ, 648.

Hab. Rocks at Boss, 6° 4′ S. lat., alt. 4068 ft., Dec. 1860, *Col. Grant!* Found also in Angola by Dr. Welwitsch, and South Africa by Zeyher and Baines.

[The Boss rock, by which this woody plant was obtained, is peculiar to this part of Africa. It was a bare rounded mass of igneous rock 40 feet above the level of the forest, and, say, a quarter of a mile in circumference of base. The plant was found in a bog at the foot of the rock, in flower during December. —J. A. G.]

COMBRETACEÆ.

1. COMBRETUM CONSTRICTUM, Lawson, in Oliv. Fl. Trop. Afr. ii. 423.—*Poivrea constricta*, Benth. Fl. Nigrit. 337. *P. mossambicensis*, Klotzsch, in Peters, Mossamb. Bot. 78, t. 13 (*fide* Lawson, *l. c.*). *Combretum* no. 5 and *Poivrea* no 1. of App. Speke's Journ. 634.

Hab. Zanzibar, Aug. 1860, and also 7° S. lat., 38° 30′ E. long., *Col. Grant!*

[Five- to six-feet-high shrub at Zanzibar, and also at 7½ S. lat., growing near water amongst other rank vegetation, with very handsome flowers of a claret- or pale port-wine colour, and somewhat bottle-brush in shape. Flowers in October.—J. A. G.]

2. COMBRETUM CAPITULIFLORUM, Fenzl; Schweinfurth in Reliq. Kotschyanæ, 33. Frutex ramosus; ramulis teretibus, glabris v. novellis ferrugineo-pubescentibus; foliis oblongis v. ovali-oblongis, obtusiusculis, mucronulatis, basi angustissime auriculatis, integris, margine undulatis, utrinque glabris, subtus nervo medio venulisque secundariis prominentibus, petiolo brevissimo pubescente; floribus 4-meris, sessilibus, in spicas breves rotundas oblongasve ferrugineo-pubescentes paniculatas congestis, bracteolis anguste linearibus v. filiformibus; fructu elliptico, quadrialato, acuto v. obtuso, glaberrimo, nitido, alis coriaceis, multo longioribus quam latis.

Folia 3–4 poll. longa, ¾–1 poll. lata; petiolus 1½–2½ lin. longus, fusco-pubescens. *Panicula* terminalis

subterminalisve, foliis sæpius brevior; spicæ ½–1 poll. longæ, ¾–1 poll. latæ. *Calyx* ¼–⅓ poll. longus, ferrugineo-pubescens, ore infundibuliformi 4-lobato, lobis late deltoideis, acutis. *Petala* elliptica, subunguiculata, 1 lin. longa. *Filamenta* filiformia, glabra. *Fructus* 1–1½ poll. longus, ½–¾ poll. latus.

Hab. Madi, Dec. 1862, in flower and fruit, *Col. Grant!*, from whose specimens I have drawn up the above description. Collected also by Dr. Kotschy and Mr. Petherick in Nile-land.

Plate XXXVIII. fig. 1. Flower; fig. 2. Petal; fig. 3. Anthers, with portion of filament; fig. 4. Vertical section of ovary and calyx-tube; fig. 5. Transverse section of fruit.

[A bush with arching branches, near water in low ground of Madi. Flowers in December. Corolla small and yellow; the leaves have a shining surface and waving edges; the four-winged capsule has a thick heart, small wings, and is ovate in shape. No uses.—J. A. G.]

3. Combretum collinum, Fresen. in Mus. Senck. 1837, 153; Lawson, in Oliv. Fl. Trop. Afr. ii. 427.—*C. elæagnifolium*, Planch. in App. Speke's Journ. 634.

Hab. Madi, Dec. 1862, *Col. Grant!* Occurs also in Nigritania, at least flowering specimens matching Col. Grant's. The fruit is unknown.

[The specimen was taken from a young healthy tree. Petals yellow. In flower at Madi in December. —J. A. G.]

4. Combretum holosericeum, Sonder, in Linnæa, xxiii. (1850) 44; Flora Capensis, ii. 510; Lawson, in Oliv. Fl. Trop. Afr. ii. 430.—*Sheadendron molle*, Klotzsch, in Peters, Mossamb. Bot. 76. *Combretum* no. 2, App. Speke's Journ. 634.

Hab. East African chain (Robeho Mtns.), 6° 38′ S. lat., alt. 4700 ft. In flower Dec. 1860, *Col. Grant!* Found also in the Chiradzura range and in Angola.

[This grows to the size of an apple-tree, on the east coast range, at an alt. of 4,700 feet. The leaves are velvet-surfaced, and rough beneath. In flower here (6° 38′ S. lat.) during December.—J. A. G.]

5. Combretum Petitianum, Rich. Fl. Abyss. i. 266; Lawson, in Oliv. Fl. Trop. Afr. ii. 432.—*Combretum* no. 4, App. Speke's Journ. 634.

Hab. Madi, in fruit Dec. 1862, *Col. Grant!* Also found in Abyssinia.

The fruits in Col. Grant's specimen are rotundate, apex entire or emarginate, about ¾ inch long and broad, thinly glandular-lepidote, with short scattered hairs on the disk.

[This, a species of the native "m'landala," is a common tree, used as firewood, with a stunted appearance and 30-inch circumference of stem. Its leaves are coriaceous, and often spotted with black. The seeds are in bundles of four-winged capsules, at Ukuni, in September.—J. A. G.]

6. Combretum reticulatum, Fresen. in Mus. Senck. ii. 154; Lawson, in Oliv. Fl. Trop. Afr. ii. 432.—*C. adenogonium*, Steud., Rich. Fl. Abyss. i. 266. *Combretum* no. 7, App. Speke's Journ. 634.

Hab. Madi, flower, Dec. 1862, *Col. Grant!* Occurs in Abyssinia.

[A small tree, in flower at Madi in December. Leaves in whorls of three and four; flowers yellow. Natives call it a species of "m'landala.—J. A. G.]

7. Combretum glutinosum, Guill. et Perrottet, Fl. Seneg. 288, tab. 68; Lawson, in Oliv. in Fl. Trop. Afr. ii. 432.—*Combretum* no. 6, App. Speke's Journ. 634.

Hab. Madi, in young fruit, Feb. 1863, *Col. Grant!* Occurs westward to Senegambia.

The leaves in Col. Grant's specimen are ternate, ovate-elliptical, acuminate, glabrescent on both sides, or the midrib and the vein-axils beneath, like the twigs, pubescent.

[This tree is common everywhere; was in fruit at Madi in February. A tree which I take to be the

same species was out of leaf, but in flower, in September; another specimen was in leaf and in fruit in December. The tree was ugly and contorted, the trunk 30 inches in circumference, the bark like our elm, the wood white and hard, the fruit ovate, 1½ inch long. The natives scour their milk-pots with its large coriaceous leaves. Charcoal is made of the wood. The natives call all *Combreta* by the generic name of "m'landala," and convert the larger species into charcoal, used by their blacksmiths in smelting iron.—J. A. G.]

Of *Combretum* no. 8, App. Speke's Journ. 634, no specimen has been preserved.

8. Terminalia macroptera ?, Guill. et Perrottet, Fl. Seneg. 276, tab. 63; Lawson, in Oliv. Fl. Trop. Afr. ii. 416.

Hab. Madi, in fruit, Dec. 1862, *Col. Grant!*

Referred with doubt to the Senegambian species by Prof. Lawson. The leaves of Col. Grant's specimen vary to 1 foot in length, and are shortly pubescent-tomentose, and strongly reticulate beneath; fruits 3 inches long, 1½–1⅔ inch broad; the dilated fructiferous disk ½ inch thick, nearly 1 inch long, and ⅔ inch broad; disk and wing thinly tomentose or puberulous.

[A fine, large, handsome tree, 10 to 12 feet circumference of trunk. The old bark is hard, black, and fissured; the young is marbled red and grey. Wood lemon-yellow and watery when fresh. The leaves are from 6 to 12 inches long, and grow in tufts from the tips of the branches; they are rough, with a polished surface. Fruit in December at Gani, 3° N. lat.,—an elliptical scale, 2 inches by 1 inch, with its centre woody and inflated in appearance; the kernel is only ¼ inch long, and eats as sweet as an almond.

Called "m'foof'oo" (Kin.). The natives use it for tinting their cloths (made of bark) a yellow colour; and the Arabs make supports for their houses of its wood. Observed only in the above locality.—J. A. G.]

9. Anogeissus leiocarpus, Guill. et Perrottet, Fl. Seneg. 280, tab. 65; Lawson, in Oliv. Fl. Trop. Afr. ii. 418.—*Conocarpus leiocarpa*, DC. Prod. iii. 16. *C. Schimperi*, Hochst., and *C. parvifolius*, Hochst., in hb. Schimp. Abyss. *Anogeissus acuminatus*, App. Speke's Journ. 634.

Hab. Bari country, White Nile, 4° N. lat.; flower, Feb. 1863, *Col. Grant!* Also in Abyssinia and Senegambia.

Prof. Lawson remarks (*l. c.*) that *A. acuminatus* of India differs in the much longer mucro of the fruit.

[Tree, with trunk from 4 to 6 feet in circumference, light airy delicate foliage; flowers, at 4° N. lat., in February. Never before met with, and unknown to our men.—J. A. G.]

Myrtaceæ.

1. Eugenia owariensis, P. de Beauv. Fl. Owar. ii. 20, tab. 70; Lawson, in Oliv. Fl. Trop. Afr. ii. 438.—*Syzygium guineense*, Guill. et Perrottet, Fl. Seneg. 315, tab. 72.

Hab. Madi, in flower (inflorescence abnormal), Dec. 1862, *Col. Grant!*

If Prof. Lawson's identification be correct, this must be a wide-spread species in Tropical Africa.

["M'safwa," plum-tree; stem 20 to 30 inches in circumference. The bark scales off and is of a red-white colour. Timber red, and cross in the grain, not milky. The branching of this tree is singular. Leaves of a grey-yellow colour. Petioles reddish, twisted, and remarkably uniform in size. A mass of inflorescence hangs from the tips of the branches, but of these flowers only two or three plums are formed. Flowers pink. Fruit a plum, walnut size, one-stoned, black or red in colour, tasting watery and cucumber-like.—J. A. G.]

2. Caryophyllus aromaticus, L.

[The clove was largely cultivated at Zanzibar: but in 1872 a terrific hurricane levelled the clove, palm,

and mango groves on the heights of the island. When we visited the place in Sept. 1860, the harvest of cloves was so abundant that the crop was not all gathered. Native name "m'grafoo."—J. A. G.]

Melastomaceæ.

1. Dissotis princeps, Triana, in Linn. Trans. xxviii. 57.—*Osbeckia princeps*, Bonpl. Rhex. tab. 46. *Dissotis eximia*, Hook. f. in Oliv. Fl. Trop. Afr. ii. 454. *Osbeckia eximia*, Sond. in Linnæa, xxiii. (1850), 48; App. Speke's Journ. 635.

Hab. Ukidi, extends southward to Natal; flower, Nov. 1862, *Col. Grant!*

[Four feet high, hardy plant, with purple flowers, near water, Ukidi Forest, November.—J. A. G.]

2. Dissotis canescens, Hook. f. in Oliv. Fl. Trop. Afr. ii. 453.—*Osbeckia canescens*, E. Mey.; Graham, in Bot. Mag. tab. 3790. *Dissotis incana*, Triana, in Linn. Trans. xxviii. 58. *Osbeckia incana*, E. Mey. ex Hochst. Walp. Rep. v. 708. *Argyrella incana*, Naud. in Ann. Sc. Nat. sér. 3. xiii. 300; App. Speke's Journ. 635. *Osbeckia Umlaasiana*, Hochst., Sond. in Fl. Capensis, ii. 518.

Hab. Karagué, flower, Feb. 1862, and Ukidi forest, flower and fruit, Nov. 1862, *Col. Grant!* Also in South Africa.

[A richly flowering plant, 3 feet high. The flowers, of a rosy pink colour, are thick upon the bunch, and are so delicate that they soon fall off. The leaves have their three back veins very large and parallel. Grows by water at Karagué.—J. A. G.]

3. Dissotis prostrata, Hook. f. in Oliv. Fl. Trop. Afr. ii. 452; Triana, in Linn. Trans. xxviii. 58. Suffrutescens, prostrata, adscendens vel subscandens, ramosa; caule flexuoso ramulisque plus minus patentim hirsutis; foliis petiolatis, ovatis v. ellipticis, acutis v. obtusis, 3–5-nerviis, integerrimis v. obsolete serrulatis, utrinque subappresse setuloso-hirsutis, subtus pallidis; floribus solitariis ternisve, terminalibus; calyce setulis stellato-fasciculatis obsito, lobis lineari-subulatis, tubo paulo brevioribus; petalis late obovatis; antheris subconformibus, in 5 majoribus connectivo infra loculos longiuscule producto, appendice 2-loba.—*Melastoma prostrata*, Schum. et Thonn. Pl. Guin. 220. *Osbeckia zanzibarensis*, Naud. in Ann. Sc. Nat. sér. 3. xiv. 55; App. Speke's Journ. 635. *Lepidanthemum triplinervium*, Klotzsch, in Peters, Mossamb. Bot. 64.

Folia 1–2 poll. longa, $\frac{1}{2}$–1 poll. lata; petiolus $\frac{1}{4}$–$\frac{3}{4}$ poll. longus. *Pedunculus* bracteatus, $\frac{1}{10}$–$\frac{1}{4}$ poll. longus; bracteæ ovatæ, circa 1 lin. longæ. *Calyx* tubo ellipsoideo v. deinde subgloboso, $\frac{1}{3}$ poll. longo, lobis persistentibus, setulis stellatim connatis, $\frac{1}{6}$–$\frac{1}{4}$ poll. longis. *Stamina* longiora, antherarum connectivo producto loculo fere æquilongo, appendice antica, 1 lin. longa.

Hab. Zanzibar, *Col. Grant!* Found also in Zambesi-land and Nigritania.

[Collected at Zanzibar island in August, when it was in flower. Rather common.—J. A. G.]

Plate XXXIX. fig. 1. Detached flower, with a single petal and a long and short stamen remaining; fig. 2. Long stamen; fig. 3. Short stamen.

4. Dissotis petiolata, Hook. fil. in Oliv. Fl. Trop. Afr. ii. 448. Erecta; caule glabro v. aculeis adpressiusculis minutis v. obsoletis in lineis verticaliter dispositis scabro, nodis setas 3–4 erectas gerentibus; foliis longe petiolatis, ovato- vel oblongo-ellipticis, acutiusculis, integerrimis, 5-nerviis, utrinque pilis arcte appressis (et fere ad apicem adnatis), strigosis,

subtus pallidis; floribus 5-meris, terminalibus, solitariis geminisve, sessilibus; bracteis involucratis; calyce glabro v. basi setoso, lobis ovato-lanceolatis, patentibus v. recurvis, tubo multo brevioribus; antheris subconformibus, in 5 majoribus connectivo infra loculos producto, appendice carnosa bilobata, lobis obtusis; capsula calyce breviora.—*Tristemma*, sp., App. Speke's Journ. 635.

Folia 3–5 poll. longa, $1\frac{1}{2}$–$2\frac{1}{2}$ poll. lata; petiolus $\frac{1}{2}$–$1\frac{1}{2}$ poll. longus. *Involucrum* bracteis exterioribus foliaceis. *Calyx* lævis, tubo oblongo-campanulato, $\frac{1}{3}$–$\frac{1}{2}$ poll. longo; lobi $\frac{1}{6}$ poll. longi. *Petala* non vidi.

Hab. Madi, flower and fruit, Dec. 1862, *Col. Grant!*

[This is an uncommon plant, found only at Madi, in the bed of a burn, in December, when it was in seed. Seeds small, round, and red. The leaves are very deep green above and paler beneath, with three prominent ribs; if rubbed reversely they feel like a file, being rough like the square stem.—J. A. G.]

Plate XL. A. fig. 1. Portion of leaf, showing the adnate setæ; fig. 2. Flower, petals and all the stamens but two removed; fig. 3. Calyx-tube cut vertically, showing the capsule.

LYTHRACEÆ.

1. LAWSONIA ALBA, Lam.; Hiern, in Oliv. Fl. Trop. Afr. ii. 483.

Hab. Banks of Nile, Philæ, *Col. Grant!* From Senegambia eastward to India.

[This "Henna" plant was not observed till reaching 24° N. lat., at Philæ, upon the Nile, where it was in flower and fruit in May.—J. A. G.]

2. NESÆA CORDATA, Hiern, in Oliv. Fl. Trop. Afr. ii. 475. Herba erecta, annua, $\frac{1}{4}$–$\frac{3}{4}$ ped. alt., glabra v. scabrula; caule basi simplici 4-angulari; foliis sessilibus, oppositis, ovatis v. superioribus lanceolatis, basi cordatis, acutis, glabris v. pilosulis; floribus capitatis, capitulis circiter 5-floris involucratis, pedunculatis, breviter racemosis; bracteis 2 cordatis vel late ovatis, bracteolis minutis linearibus, tubo calycis subæquilongis; calyce campanulato, membranaceo, margine breviter 4–6-deltoideolobato, dentibus isomeris, erectis, subulato-linearibus, lobis alternantibus.—*N. erecta*, App. Speke's Journ. 634.

Caulis basin versus sæpius defoliatus, glaber v. glabratus. *Folia* $\frac{1}{4}$–$\frac{1}{2}$ poll. longa. *Pedunculi* axillares, folium subæquantes. *Involucrum* $\frac{1}{3}$ poll. latum, bracteis duabus cymbiformibus, oppositis, divaricatis, glabris v. pilosulis. *Ovarium* sessile, 2-loculare.

Hab. Madi, in advanced flower, Dec. 1862, *Col. Grant!* Found also in Nigritania and Angola.

Plate XL. B. fig. 1. Capitulum and bracts; fig. 2. Single flower and pair of bracteoles; fig. 3. Flower laid open; fig. 4. Petal; fig. 5. Transverse section of ovary; fig. 6. Capsule; fig. 7. Vertical section of same; fig. 8. Seed.

[Diminutive plant in the swampy ground at Madi, October 1862.—J. A. G.]

3. AMMANNIA SENEGALENSIS, Lam.; Hiern, in Oliv. Fl. Trop. Afr. ii. 477.—*A. vesicatoria*, App. Speke's Journ. 634; var. δ. *patens*, Hiern, *l. c.* Annua v. biennis, 1–2-pedalis; ramulis foliisque patentibus; cymis multifloris, densis, subsessilibus; staminibus 4, brevibus; ovario 2-loculari.

Hab. Madi, flower and fruit, Dec. 1862, *Col. Grant!* Widely spread in Tropical Africa.

[This is one of those plants which grow in the mud accumulated upon surface-rocks at Madi, where it was in flower in December.—J. A. G.]

Onagrarieæ.

1. Epilobium hirsutum, L.; Oliv. Fl. Trop. Afr. ii. 487.—*E. foliosum*, Hochst. in hb. Schimp. Abyss.

Hab. Marenga Mkhali, Ugogo, Nov. 1860, in advanced flower, *Col. Grant!* Widely spread in the Old World. Occurs in Abyssinia and at the Cape (*E. villosum*, Thunb.).

[A tall plant with pink flowers, November, by a stream at 6° 44′ S. lat., alt. 3900 feet.—J. A. G.]

2. Jussiæa diffusa, Forskål; Oliv. Fl. Trop. Afr. ii. 488.—*J. stolonifera*, Guill. et Perrottet, Fl. Seneg. i. 292. *J. repens*, App. Speke's Journ. 634.

Hab. Kazé, 5° S. lat., and Unyoro, Oct. 1862, in flower and fruit, *Col. Grant!* Extends westward to Senegambia, and southward to Zambesi-land. Perhaps but a variety of *Jussiœa repens*.

[Grows abundantly near springs on flat ground at 5° S. lat.; found also at Unyoro, 2° N. lat., floating in Nile water. Flowers bright yellow, October.—J. A. G.]

3. Jussiæa pilosa, H., B. et K.; Oliv. Fl. Trop. Afr. ii. 488.—*J. villosa*, App. Speke's Journ. 634.

Hab. On the Nile, 3° and 10° N. lat., *Col. Grant!* Apparently widely spread in Tropical Africa; occurring also in Tropical America.

[Collected on the Nile at 3° N., where it was 4 feet high in the marshes, and again on the Nile at 10° N. lat., where this bushy plant was in flower in March.—J. A. G.]

4. Jussiæa villosa, Lam.; Oliv. Fl. Trop. Afr. ii. 489; App. to Speke's Journ. 634.

Hab. Ukidi and Madi, flower, Nov. and Dec. 1862, and (less hirsute form, *J. angustifolia*, App. Speke's Journ. 634) 7½° S. lat., *Col. Grant!* Widely spread in tropical countries.

[M'géta river bank; in flower in October.—J. A. G.]

5. Jussiæa linifolia, Vahl; Oliv. Fl. Trop. Afr. ii. 489; App. Speke's Journ. 634.

Hab. Zungomero, 7° 27′ S. lat., *Col. Grant!* Widely spread in Tropical Africa; also American.

[Stem and leaves are tinted with red. Flowers small, yellow. Found on the bank of the river at Zungomero, 7½° S. lat. In flower October.—J. A. G.]

6. Ludwigia parviflora, Roxb.; Oliv. Fl. Trop. Afr. ii. 490; App. Speke's Journ. 634.—*Isnardia multiflora*, Guill. et Perrottet, Fl. Seneg. i. 295 (ex descr.).

Hab. Unyoro, advanced flower, Nov. 1862, *Col. Grant!* Also in Senegambia, Tropical Asia, and Australia.

[A foot high. Grows near moisture at 2° N. lat., where it flowers in November.—J. A. G.]

7. Trapa natans, L.; Oliv. Fl. Trop. Afr. ii. 491; App. Speke's Journ. 634.

Hab. Floating on the Nile, 2° N. lat., Nov. 1862, *Col. Grant!* The only specimen I have seen from Tropical Africa. Occurs in temperate Asia and Central Europe.

[The shores of the Victoria Nyanza at the equator are strewed with its seed-vessels, which the Waganda string together and wear like a sash over the shoulder. The specimen was gathered while crossing the Katonga river under the equator, where it grows along with the water-lily. Called "m'beegeeree," after the wild boar, which eats its fruit."—J. A. G.]

CUCURBITACEÆ.

1. LAGENARIA VULGARIS, Ser.; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 529; App. Speke's Journ. 635.

Hab. Unyoro, Oct. 1862, *Col. Grant!* Common throughout Tropical Africa.

[" M'booyoo," or bottle-gourd; grows by huts, plantain-groves, or amongst grass. Whole stem is downy and clammy to the touch. Calyx fleshy, corolla white. A difficult plant to dry, from the quantity of water in it. Found everywhere; and its gourd is the African's tumbler, decanter, butter-churn, quiver, fiddle or sounding-board, &c.—J. A. G.]

2. LUFFA ÆGYPTIACA, Miller; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 530.—*L. pentandra*, Roxb. Fl. Ind. iii. 712; App. Speke's Journ. 635.

Hab. Unyanyembé, 5° S. lat., *Col. Grant!* Cultivated throughout tropical countries.

[Found in flower in March, at 5° S. lat., growing over the fences; again at 6° to 9° N. lat., on the banks of the Nile. The name of "towel-gourd" has been given to this, as the gourd is sufficiently watery for the natives to wash their hands &c. with it.—J. A. G.]

3. LUFFA ECHINATA, Roxb.; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 531.—*Luffa* no. 2, App. Speke's Journ. 635.

Hab. On the Nile, 16° N. lat.; fruit, April 1863, *Col. Grant!* Also Indian.

[Found in the Nile at 16° N. lat., amongst the reeds and grasses there. In fruit April.—J. A. G.]

4. MOMORDICA TRIFOLIOLATA, Hook. fil. in Oliv. Fl. Trop. Afr. ii. 537. Caule tenui; valide sulcato, glabro; foliis brevissime petiolatis, 3-foliolatis, scabrulis; foliolis petiolulatis, ovatis, obtusis, mucronatis, basi rotundatis v. cordatis, integris subtrilobatisve remote denticulatis, cirrhis simplicibus; floribus masculis subracemosis v. solitariis, pedicellis inæquilongis patentibus, bracteis subulatis, bracteola sub flore rotundata; calyce hemisphærico, 5-fido, lobis late ovatis v. rotundatis, obtusis; floribus fœm. . . . .—*Momordica* no. 2, App. Speke's Journ. 635.

Foliola 1 poll. longa; petiolus $\frac{1}{6}$–$\frac{1}{4}$ poll., petioluli $\frac{1}{4}$–$\frac{1}{2}$ poll. longi. *Pedunculi* $\frac{1}{2}$–$1\frac{1}{2}$ poll. longi. *Fl. mas.* 1 poll. diametro. *Fl. fem. et fruct.* desunt.

Hab. Zungomero, 7° 27′ S. lat.; flower, October 1860, *Col. Grant!*

Plate XLI. fig. 1. Bud; fig. 2. Expanded staminate flower; fig. 3. Andrœcium.

[In flower in October at 7° 27′ S. lat. Flowers yellow; found clinging about grass.—J. A. G.]

5. MOMORDICA MORKORRO, A. Rich.; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 538.—*M. Vogelii*, Planch. in Fl. Nigr. 369. *M. cordifolia*, Sond., *M. Schimperiana*, Naud., and *M.* ? *fœtida*, Schum. et Thonn. (*fide* Hook. fil. *l. c.*). *Momordica* no. 1, App. Speke's Journ. 635.

Hab. Ukidi, fruit, Nov. 1862, *Col. Grant!* Also in Zambesi-land and in the Gulf of Guinea.

[This plant smells unpleasantly. The stem is streaked with green; the four corners are sharp and twisting. The leaves on their upper surface, if reversely rubbed, are as rough as a file. The flowers, in November, $2\frac{3}{4}$° N. lat., are of a rich cream-colour. Fruit a thorn-apple, 2 inches in diameter, elliptical, of the palest green colour, covered with curved thorns, which are of a rich yellow colour. Seeds flat, elongated, and covered with an envelope.—J. A. G.]

6. CITRULLUS COLOCYNTHIS, Schrad.; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 548; App. Speke's Journ. 635.

Hab. 19° N. lat., flower, May 1863, *Col. Grant!* Common in Nile-land, the Mediterranean countries, and India.

[Creeper, found spreading itself over sand hillocks of the desert, at 19° N. lat., after each rainy season. The leaves are of a beautiful green colour, crisp to feel, and curling; but they smell most unpleasantly if rubbed. The fruit is from 6 to 9 inches in diameter; from it a liquid or tar, which smells of fish-oil, is extracted by the people of Berber upon the Nile. The fruit is heated in the fire in an earthen vessel with a hole in it; and the oil drips through to another vessel, nothing being added, to make it fit for smearing leather water-bags. The bad smell of the oil, and, indeed, of the leaves, prevents the camels from cutting open the water-bags when crossing a desert. The tar sells at two pence per pint. The shell colocynth is called here on the Nile "hundhul."—J. A. G.]

7. CEPHALANDRA INDICA, Naud.; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 550.—*Coccinia indica*, Wight, Ill. ii. tab. 105; App. Speke's Journ. 635, and *Cucurbitacea* no. 3 (*l. c.*). *Coccinia Schimperi*, Naud., *C. Moghadd*, Ascherson, et *Cucurbita exanthematica*, Fenzl (*fide* Hook. fil. *l. c.*).

Hab. M'géta, flower, Oct. 1860, and Unyoro, flower and fruit, Oct. and Nov. 1862, *Col. Grant!* Extends from Senegambia eastward into India.

[This grows luxuriantly over trees, covering them with its leaves. The leaves have their edges tipped behind with red spots. The fruit, in November at 2° N. lat., is 2 inches long by 1 across, green, with six to eight streaks on its surface, which is smooth. The Waganda admire this plant, and wreath it round their heads.—J. A. G.]

8. CEPHALANDRA QUINQUELOBA, Schrad.; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 551.—*Coccinia palmatisecta*, Kotschy (*fide* Hook. fil. *l. c.*). *Cucurbitacea* no. 1 & 2, App. Speke's Journ. 635.

Hab. M'géta, 7° 20′ S. lat., flower, Oct. 1860, and Noer country, 8°–9° N. lat., flower, March 1863, *Col. Grant!* Also in Mozambique and South Africa.

[First gathered at 7° 20′ S. lat., where its flowers were observed to close with the sun. Again at 7°–8° N. lat., in the Noer country on the Nile, growing up *Acacia Catechu*, with its beautiful leaves much soiled from the droppings of birds, which literally swarm here. Flowers (yellow-white) in March. —J. A. G.]

9. CUCURBITA MAXIMA, Duchesne; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 555; App. Speke's Journ. 635.

Hab. Unyoro, *Col. Grant!* A variable plant, largely cultivated in the tropics.

[This "maboga" vegetable is extensively used by the natives, who cook its leaves, male flowers, and seeds, as well as the fruit, and call it "matagararreh." Met with from 5° S. to 2° N.—J. A. G.]

10. BRYONOPSIS LACINIOSA, Arnott; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 556.—*Bryonia laciniosa*, L.; App. Speke's Journ. 635. *B. tenuis*, Klotzsch (*fide* Hook. fil. *l. c.*).

Hab. Unyoro, flower, Nov. 1862, *Col. Grant!* Widely spread in the Old-World tropics.

[This climber is offensive in smell to handle and to cut. The leaves have a rough surface, and are of a very dark glossy green colour. The fruit is the size of a marble, and its surface is beautifully marked longitudinally with eight to ten streaks of white and scarlet. The natives would prize beads made to resemble the fruit even more than silver coinage, which they are ignorant of.—J. A. G.]

11. MUKIA SCABRELLA, Arnott; Hook. fil. in Oliv. Fl. Trop. Afr. ii. 561; App.

Speke's Journ. 635.—*M. madraspatana*, Ascherson, *Bryonia micrantha*, Hochst., et *B. obtusa*, A. Rich. (*fide* Hook. fil. *l. c.*).

Hab. By the Nile, March 1863, *Col. Grant!* Widely spread in Tropical Africa. Occurs at Natal, and common in India.

[Found on the shore of the Nile between Khartoom and Gondokoro, March 1863.—J. A. G.]

12. Melothria triangularis, Benth. Fl. Nigr. 367; App. Speke's Journ. 635.—*Bryonia capillacea*, Schum. et Thonn. (*fide* Hook. fil. *l. c.*).

Hab. Unyoro, flower, Nov. 1862, *Col. Grant!* Occurs also in West Tropical Africa.

[Flowers in the forests during November at 2½° N. lat.—J. A. G.]

Besides the above, Col. Grant observed the cucumber (*Cucumis sativus*, L.) cultivated by the Arabs at 5° S. lat., and also the Common Papaw (*Carica Papaya*, L.). I have not seen specimens.

[The Arabs say that the seeds of the Papaw were obtained from Maroongoo, at the southern end of Lake Tanganyika, brought there probably by the Portuguese. It tastes the same as our English cucumber, is eaten raw, and called by the Indian name of "keera."—J. A. G.]

Ficoideæ.

1. Trianthema crystallina, Vahl; Oliv. Fl. Trop. Afr. ii. 587; App. Speke's Journ. 635.

Hab. Desert on the Nile, 18°–19° N. lat., May 1863, *Col. Grant!* Common in Nile-land. Occurs also in Angola and eastward through Tropical Asia to Australia.

[The only part of the whole route where this beautiful plant was found was in the desert by the Nile at 18¾° N. lat., where it grows flat on the bare gravelly soil, glistening like a green jewel. In flower (yellow inside) on the 1st of May. There were some curious cobalt-blue rocks, much waterworn, in this locality; and the *Hyphæne thebaica* lined the bank of the river. It is called "reeg'lah" here, and was quite unknown to our followers; but Speke recognized it as an old Somali friend, and said that sheep eat it greedily.—J. A. G.]

2. Mollugo nudicaulis, Lam.; Oliv. Fl. Trop. Afr. ii. 591; App. Speke's Journ. 626. —*M. bellidifolia*, Seringe, in DC. Prod. i. 391.

Hab. Zungoméro, flower, Oct. 1860, *Col. Grant!* Widespread in tropical countries.

[From 7° S. lat. In flower (white) October.—J. A. G.]

3. Mollugo Cerviana, Seringe; Oliv. Fl. Trop. Afr. ii. 591.—*M. umbellata*, Seringe, in DC. Prod. i. 393. *Pharnaceum umbellatum*, Forsk. (*fide* Fenzl).

Hab. Zungoméro, Oct. 1860, *Col. Grant!* Widespread in warmer regions of the Old World.

[Delicate plant, found upon ground which had once been cultivated. The stems and leaves are pinkish, and the flowers (October) white. Lat. 7° S.—J. A. G.]

Umbelliferæ.

1. Hydrocotyle natans, Cyr.; Hiern, in Oliv. Fl. Trop. Afr. iii. 5 (ined.).—*H. adoensis*, Hochst., in hb. Schimp. Abyss. (*fide* Hiern, *l. c.*).

Hab. Unyoro, *Col. Grant!* Grows also in Abyssinia, the Mediterranean region, and elsewhere.

[In flower October in the Unyoro marshes, alt. 3300 feet.—J. A. G.]

2. HETEROMORPHA ARBORESCENS, Cham. et Schlecht.; Hiern, in Oliv. Fl. Trop. Afr. iii. 10 (ined.).—*H. abyssinica*, Hochst., App. Speke's Journ. 635.

Hab. Karagué, flower, Dec. 1861, *Col. Grant!* Grows also in Abyssinia and Zambesi-land.

[Shrub on the Karagué hills. In flower December.—J. A. G.]

3. DIPLOLOPHIUM ABYSSINICUM, Benth. & Hook. fil.; Hiern, in Oliv. Fl. Trop. Afr. iii. 17 (ined.).—*D. africanum*, Turcz., and *Cachrys abyssinica*, Hochst. (App. Speke's Journ. 636), *fide* Hiern, *l. c.*

Hab. Madi, flower, Dec. 1862, *Col. Grant!* Also in Abyssinia and Fesoglu.

[Four feet high, growing in the woods of Madi and Ukidi. The plant has a bushy appearance, from the manner of subdivision in the branches. Inflorescence dense; flowers white. The whole plant is sweetly perfumed, similar to peppermint. Flowers December.—J. A. G.]

4. PEUCEDANUM FRAXINIFOLIUM, Hiern, in Oliv. Fl. Trop. Afr. iii. 22 (ined.).—Arbor glabra; foliis in apicibus ramorum confertis, imparipinnatis, sæpius 9-foliolatis; foliolis ovato-lanceolatis, acuminatis, inæqualiter et molliter setoso-serratis, lateralibus sessilibus; panicula ampla, terminali, glabra; umbellis pedunculatis; bracteis bracteolisque parvis, lineari-lanceolatis; pedunculis pedicellisque divaricatis; fructu (immaturo) obovato v. oblongo-obovato, disco indurato coronato.—*Steganotænia araliacea*, Hochst., var. *a*, Rich. Fl. Abyss. i. 328 (*fide* Hiern, *l. c.*). *Steganotænia*, sp., App. Speke's Journ. 635.

Rami teretes, læves, cortice pallida obtecti, $\frac{1}{4}$–$\frac{1}{3}$ poll. diam. *Folia* $\frac{3}{4}$–1 ped. longa, glabra, petiolo communi tereti basi in vaginam brevem dilatato; foliola $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, 1–$1\frac{1}{2}$ poll. lata, lateralia (in spec. Grantianis) sessilia, terminalia petiolata; petiolulus $\frac{1}{2}$–$\frac{3}{4}$ poll. longus. *Panicula* 1–2 ped. lata; pedunculis rigidis, divergentibus, ramulos sæpius oppositos infra umbellam centralem emittentibus; pedunculi $\frac{1}{3}$–$\frac{1}{2}$-ped.; umbellarum radii 7–15, 1–2 poll. longi; umbellularum pedicelli $\frac{1}{6}$–$\frac{1}{4}$ poll. longi. *Involucrum* bracteis patentibus v. recurvis, $\frac{1}{6}$ poll. longis; involucellorum bracteolæ $\frac{1}{10}$–$\frac{1}{6}$ poll. longæ. *Calyx* dentibus minutis, deltoideis. *Styli* tempore florifero brevissimi, fructiferi longiusculi divergentes. *Fructus* maturus . . . ., immaturus compressus, alatus, lævis, $\frac{1}{3}$ poll. longus.

Hab. Madi, flowers and young fruit, Dec. 1862, *Col. Grant!* Mr. Hiern identifies an Abyssinian and Angolan plant with this.

[Tree. The branches have the remains of the petioles upon them like palm-stems. The leaflets, of a pale green, have fringed edges. In young shoots the wood is easily pulled out of the bark; and they are converted into whistles by goatherds. Our men say that this is a bad tree; for with a branch of it in the hand of a robber, he can steal cattle, rob a house, or do any mischief unperceived. In flower, Madi, December. Native name "meeonga pembeh"=Meeonga's whistle.—J. A. G.]

Plate XLII. fig. 1. Bud; fig. 2. Expanded flower; figs. 3 & 4. Petals; fig. 5. Immature fruit.

5. PEUCEDANUM GRANTII, Kingston MSS.; Hiern, in Oliv. Fl. Trop. Afr. iii. 21 (ined.). Herba erecta, glabra, 3–7-pedalis; caule tereti, striato; foliis caulinis inferioribus bipinnatis, longe petiolatis, pinnis petiolulatis, foliolis subsessilibus, lanceolatis v. ovato-lanceolatis, acuminatis, serratis v. inciso-serratis; foliis superioribus parvis, pauci- v. 3-foliolatis, foliolis lineari-lanceolatis; umbellis pedunculatis, exinvolucratis v. bractea solitaria, parva, involucellis paucibracteolatis; fructu compresso, elliptico-oblongo v. obovato-oblongo, emarginato, utrinque alato, dorso obscure tricostato, vittis dorsalibus 4 inconspicuis, jugis alternantibus, commissuralibus 4 remotiusculis; carpophoro bipartito, filiformi.—*Peucedanum*? sp., App. Speke's Journ. 636.

Foliola 1–2½ poll. longa. *Umbellæ* compositæ; radii adscendentes, ⅛–1 poll. longi; umbellulæ ⅛–¼ poll. longi; involucellorum bracteolæ minutæ, subulatæ. *Fructus* ⅓ poll. longus, ⅙ poll. latus.

Hab. Unyoro, flower and young fruit, Aug. 1862, *Col. Grant!* Collected also by Schimper in Abyssinia, and sent by Consul Petherick from the White Nile.

[Plant 6 to 7 feet high, generally not far from water. In flower September at 2° N. Stem hollow, as thick as a walking-stick, cylindrical and grooved. Stamina 5: generally only one of these attains full length; the others remain curled round the pistil.—J. A. G.]

Plate XLIII. fig. 1. Detached flower; fig. 2. Same, petals and stamens removed; fig. 3. Umbel in fruit; fig. 4. Single fruit, showing dorsal ridges; fig. 5. Transverse section of a mericarp.

6. Lefeburia brachystyla, Hiern, in Oliv. Fl. Trop. Afr. iii. 23 (ined.). Herba 3-pedalis, glabra, glaucescens; caule erecto, gracili, striato; foliis caulinis ternatim 3-partitis, inferioribus longe petiolatis; foliolis lineari-lanceolatis v. anguste lineari-ovalibus, obsolete et remote serrulatis, basi longe attenuatis; umbellis pedunculatis, exinvolucratis, radiis 6–9, involucellorum bracteolis filiformibus; fructu obovato-elliptico, pedicello longiore, apice rotundato, emarginato, alato, disco dorsali tricostato, vittis 4 jugis alternantibus; carpophoro bipartito, filiformi.—*Lefeburia*, sp. nov., App. Speke's Journ. 636.

Folia caulina inferiora petiolo 1 ped. longo; foliolis 4–6 poll. longis, ¼ poll. latis. *Pedunculi* erecti, 5–6 poll. longi. *Umbellæ* radii 1½–2½ poll. longi, graciles. *Fructus* 5–6 lin. longus, 3½–4 lin. latus.

Hab. On the river Wallah, in Unyamuezi, 5° S. lat., alt. 3800 feet, in fruit only, *Col. Grant!*

[Found in seed, February, amongst dense vegetation in the back waters of the river Wallah, 5° S. lat.—J. A. G.]

Loranthaceæ.

1. Loranthus Acaciæ, Zuccarini; Walp. Rep. ii. 443.

Hab. Nile banks, March 1863, *Col. Grant!* The same species occurs in Syria.

[Met with in several localities between 2° and 9° N. lat., but generally growing upon the *Acacia Seyal*, the trunk and stem of which is curiously coloured with a powder of an Indian-red colour. At Ukidi this beautiful parasite covered the tops of the trees, forming quite a bush where they joined the tree, and spreading out its red uniform bending branches. Calyx green, corolla pink. Native name "changool'a" (Kis.).—J. A. G.]

2. Loranthus usuiensis, Oliv., sp. nov. Ramis teretibus, crassiusculis, nodis defloratis tuberculatis, innovationibus pallide tomentosis, mox glabratis; foliis oppositis, petiolatis, oblongo-ellipticis v. ovato-lanceolatis, obtusis, integerrimis, glabris, obscure penniveniis; floribus in nodis dense fasciculatis, sessilibus, singulatim unibracteolatis, stellatim ferrugineo-tomentosis; calycis limbo brevissimo, subintegro; corolla lateraliter ad medium fissa; antheris adnatis, ellipticis.

Rami crassitie pennæ cygneæ, cortice lævi subcinnamomeo induti, novelli tomentosi. *Folia* 3–3½ poll. longa, 1–1½ poll. lata; petiolus ⅓–½ poll. longus. *Calyx* lineam longus, bracteola ovata appressa duplo longior. *Corolla* 1–1¼ poll. longa, basi leviter globoso-dilatata. *Antheræ* ellipticæ, connectivo dorso latiusculo. *Stigma* capitellatum.

Hab. Usui, flower Nov. 1861, *Col. Grant!*

[Parasitical plant, sometimes covering a whole tree, and becoming a tree. On the 2nd November at 2° S. lat., amongst rocks on a hill-chain 4000 feet high, one tree was measured of 7 inches diameter. The

bark was soft, smooth, and of a pale grey colour. The corolla is divided into five claws at tip; one side of it is split halfway down, showing five curled-up stamina and one pistil.—J. A. G.]

Plate XLIV. fig. 1. Flower, detached and much enlarged; fig. 2. Anther, back and front; fig. 3. Ovary and style; fig. 4. Fruit. The flowers are not so long as, and distinctly more slender than, represented on the Plate.

3. LORANTHUS, sp. nov.? Material insufficient for description.

[At 6° 47′ S. lat., alt. 3000 feet, this parasite was found grafted or growing upon the higher branches of living trees, and also upon a gigantic thistle. Its branches were not branched, but merely wands, 3 feet long, with flowers in sets at intervals along these stems, and leaves at their tips. The flowers in November were 2 inches long, clove-coloured, and drooped from the stems.—J. A. G.]

4. VISCUM TUBERCULATUM, A. Rich. Fl. Abyss. i. 338 (ex descr.). Glabrum; ramis crassiusculis, subteretibus, novellis angulatis; foliis obovato-rotundatis ellipticisve rarius ovatis, apice obtusis, breviter petiolatis, coriaceis, subtus trinerviis; floribus parvis, in nodis tuberculatis sessilibus; ovario basi 2-bracteolato, bracteolis vaginatim connatis; fructu subgloboso, tuberculato.

Rami $\frac{1}{4}$–$\frac{1}{3}$ poll. diametro, nodis incrassato-tuberculatis. *Folia* 1–1$\frac{1}{6}$ poll. longa, $\frac{1}{2}$–$\frac{3}{4}$ poll. lata; petiolus $\frac{1}{10}$–$\frac{1}{6}$ poll. longus. *Bacca* magnitudine baccarum *Piperis nigri,* apice stylo persistente coronata. *Fl. masc.* . . . .

Hab. Usui, 2° 42′ S. lat., alt. 4500 feet, Nov. 1861, *Col. Grant!* Occurs also in Abyssinia.

[Found covering a tree on the rocky terrace of Usui, alt. 4500 feet. Leaves fleshy, the same colour upon both sides. The flower, in November, has four fleshy yellow petals, with black pistil in its centre. Berry the size of a small pea, round, orange-colour, thin skin, breaks like a currant; and the large green seed is enveloped in mucilage.—J. A. G.]

Plate XLV. fig. 1. Female flower and sheathing connate bracteoles; fig. 2. Same, in section; fig. 3. Young, and fig. 4. Mature fruit; fig. 5. Transverse section of latter.

RUBIACEÆ.

1. SARCOCEPHALUS RUSSEGGERI, Kotschy; Schweinfurth, in Reliquiæ Kotschyanæ, 49, tab. 33.

Hab. Madi, Feb. 1863, *Col. Grant!*

Although we have only a leafy specimen, I cannot doubt the identity of Col. Grant's plant with Kotschy's no. 511, from Fesoglu. How far *S. Russeggeri* may be specifically different from *S. esculentus,* Sab., I do not here stay to inquire. Col. Grant describes the fruit as edible.

[A scrubby-looking tree, growing in the woods of Madi; the bark much split into long, straight-sided, half-inch-wide stripes, which are of a silver-grey colour and dotted. The inner bark was much cut away, as if the natives made some use of it. The peculiarity of the tree is that its main branches throw out opposite ones, which subdivide and throw out three to five pairs of leaves, and the foliage becomes thus too heavy, and dies with the season. The leaves vary much in size: some are the size of a plate and round, others broadly elliptical; and those upon the low branches are small, growing in tufts and concealing the stem. All the leaves have a shining surface, have a red midrib, and the ribs are prominent behind. Fruit (sometimes hanging from the stems) is round, 2 inches in diameter, marked surface, and brown colour like the skin of a native, can be bitten like an apple, and tastes something like one. A section of this fruit shows innumerable rays from a solid centre; between these rays there is the red-pink pulp and the seeds, which are red, ovate, and not larger than the head of a pin. Our men could not name it to me; but the Egyptians eat the ripe fruit on the tenth of February.—J. A. G.]

2. HYMENODICTYON, sp.?

A fruiting specimen only, which I cannot venture to identify with any species in the Kew herbarium. Extremities puberulous; leaves broadly ovate, or almost rotundate-elliptical, obtuse, or broadly pointed, early glabrous, 2–2½ ins. long, with petioles, winged above, of ⅓–½ in. Stipules caducous. Fruits ¾ in. in length, shortly pedicellate.

Hab. Madi (no. 686), fruit, Dec. 1862, *Col. Grant!*

[Shrub, 6 to 8 feet high, with clusters of fruit, ripe in December, and growing on the banks of the stream at Madi, 3° N. lat. The seed-vessel is olive-shape and size, of a dull purple-brown colour, with grey excrescences upon its surface. Each seed-vessel at its extremity splits into four; and there appear one division and four flat elliptical winged scales. A fruit-bearing branch grows opposite a leaf-bearing one. Leaves glossy and soft, broadest at their extremity. Wood said to be useless. Called "m'poom-veea" by Wakeembo and "m'fō" (Kin.).—J. A. G.]

3. CROSSOPTERYX KOTSCHYANA, Fenzl; Walp. Rep. vi. 70; Kotschy et Peyr. Pl. Tinn. 32, tab. xv.

Hab. Madi, flower and fruit, Dec. 1862, *Col. Grant!* Found also in Fesoglu and elsewhere in Nile-land, in Zambesia and Senegambia. *C. febrifuga,* Benth., to which it was referred in App. Speke's Journ. 636, may prove to be merely a glabrous form.

[Native name "m'tæloambai" (Kin.). A bushy-growing tree or shrub, many branches and brittle wood, found in fruit at Madi in December. It has many clusters of pea-sized elliptical berries from the tips of the branches. When ripe these are hard, black, shining, with the mark of a large calyx on them; they split naturally into two, with two seeds, marked by four to five fringed scales. Large caterpillars eat its leaves, which are closely downy underneath, with prominent yellow-tinted ribs. A variety with sweetly-scented flowers, pink corolla-tube, more linear petals than above, and different leaves was also observed. The natives fumigate their bark cloths with its seeds; they also powder them, and rub their bodies with a pomade of it.—J. A. G.]

4. PENTAS QUARTINIANA, Hook. fil. in Benth. & Hook. fil. Gen. Pl. ii. 54. Erecta e basi suffrutescente; caule subquadrato-tereti, pilosulo v. pubescente, sicco internodiis bisulcato; foliis lanceolato-ellipticis, acutis, basi in petiolum brevissimum angustatis, supra pilosulis glabratisve, subtus præcipue in nervo medio secundariisque (utrinque ad 14–18) hirtellis, stipularum lobis erectis, setoso-filiformibus; paniculis terminalibus, multifloris, densis; floribus subsessilibus; calycis lobis duobus contiguis quam cæteris majoribus; corollæ tubo gracili sursum infundibuliformi-dilatato, fauce pilosa, lobis tubo 3–4-plo brevioribus, ovato-oblongis; staminibus inclusis.—*Vignaldia Quartiniana,* A. Rich. Fl. Abyss. i. 357; App. Speke's Journ. 636.

Herba 1½–2 ped. alta. *Folia* 4–5 poll. longa; petiolus ⅙ poll. v. brevior. *Flores* in paniculam cymosam, rotundatam congesti, sessiles v. brevissime pedicellati. *Calyx* scabridus, lobis majoribus ovalibus, ¼–⅓ poll. longis, cæteris inæqualibus, lineari-lanceolatis, $\frac{1}{12}$–⅙ poll. longis. *Corolla* tubo ¾ poll. longo, supra medium dilatato, extus glabro, lobis ovato- v. lanceolato-oblongis, æstivatione valvatis. *Antheræ* anguste lineares, sub medio affixæ, inclusæ. *Stylus* exsertus, bifidus, lobis linearibus.

Hab. Madi and Ukidi, Nov. and Dec., in flower, *Col. Grant!*

[This plant grows 2 feet high near the open grassy ground of the forests at 3° N. lat. Uncommon, and only observed here.—J. A. G.]

Plate XLVI. fig. 1. Single flower, detached; fig. 2. Corolla, laid open; fig. 3. Anther; fig. 4. Calyx and pistil; fig. 5. Transverse section of ovary; fig. 6. Placenta covered with ovules; fig. 7. Detached peltate ovule.

5. PENTAS PURPUREA, Oliv., sp. nov. Erecta e basi lignosa; caule subtereti, hispidulo-hirtello; foliis lineari-lanceolatis, acutis v. obtusiusculis, inferioribus in petiolum brevem angustatis, superioribus subsessilibus, utrinque scabris v. inferioribus glabratis, læviusculis; stipulis 3- (pluri-)partitis, lobis subulatis; cyma terminali sessili, subglobosa; floribus subsessilibus; calyce glabro v. pilis paucis brevibus hirto, lobis inæqualibus, lineari-subulatis v. longioribus linearibus, acutis; corollæ tubo inconspicue dilatato, lobis calycis longioribus sæpius longiore, lobis ovato-lanceolatis; staminibus inclusis.

Caulis 1–$1\frac{1}{2}$ ped. *Folia* 4 poll. longa, $\frac{1}{2}$–1 poll. lata. *Cyma* terminalis, subglobosa, bibracteata, pollicem diametro. *Floribus* purpureis. *Calyx* lobis $\frac{1}{6}$–$\frac{1}{3}$ poll. longis. *Corolla* extus parce puberula, lobis ovato-lanceolatis. *Antheræ* lineares, inclusæ.

Hab. Usui, 2° 41′ S. lat. (*Vignaldia* no. 2, App. Speke's Journ. 636), in flower, Nov. 1861, *Col. Grant!*

[12 to 18 inches high, with rough round stem. Root long and fibrous, stuck firmly in the ground. Leaves rough. Flowers of a deep purple colour; the pistil purple at its tip. Seeds small and numerous. On the Usui slopes of rock, November 1861.—J. A. G.]

Col. Grant also collected at Zanzibar another *Pentas*, perhaps a form of *P. carnea*, Benth. The flowers, however, are smaller than in the usual state of that species, and it may probably fall under one of the critical species described by Klotzsch in Peters's Mossamb. Bot. 286, under the genus *Pentanisia*. *Pentanisia* no. 1, App. Speke's Journ. 636, is an Asclepiad.

6. OTOMERIA MADIENSIS, Oliv., sp. nov. Suffrutex decumbens; ramis foliiferis, adscendentibus, hirtello-scabridis; foliis oblongo- v. ovato- v. lanceolato-ellipticis, subacutis, basi in petiolum angustatis, utrinque pilosulis v. pagina superiore glabrata, inferiore præcipue secus nervos scabrido-hirtella; stipulis vaginantibus, laciniis anguste linearibus, setulosis; spicis terminalibus, solitariis elongatisque vel paniculatis; floribus subsessilibus, secus rachin primum confertis, demum fasciculatim v. singulatim alternis, calycis tubo turbinato-campanulato, lobo antico lineari-lanceolato, cæteris tubo (3–4-plo) longiore valide costato; corollæ tubo gracili, cylindrico, quam calyce multo longiore, lobis oblongo-ellipticis; staminibus breviter exsertis.

Rami foliiferi, subteretes v. obsolete tetragoni. *Folia* 3–5 poll. longa, $\frac{3}{4}$–$2\frac{1}{2}$ poll. lata; petiolus plus minus alatus, brevis vel ad $\frac{3}{4}$ poll. longus. *Spicæ* interdum pedales, rigidiusculæ. *Pedicelli* calycis tubo subæquilongi, erecti, rhachi appressi. *Calyx* strigulosus v. glabratus, tubo (fructifero) valide costato, lobo ut videtur antico cæteris majore $\frac{1}{4}$–$\frac{1}{3}$ poll. longo, lobis 4 brevioribus, ovato- v. lineari-lanceolatis, acutis, tubo æquilongis v. eodem longioribus. *Corolla* $\frac{3}{4}$–1 poll. longa, tubo gracili, glabro, intus fauce pilosula.

Hab. Madi (No. 691), Dec. 1862, *Col. Grant!*

[Rare plant, growing on bare ground near surface-rocks, Madi, December. A foot high; but a considerable part of the plant is decumbent. The leaves are peculiarly marked with rust-coloured spots, ribs large underneath. The flowers spire up the erect stem, which is roundly four-cornered, four-grooved, and covered with hair. The sepals are a brown-green colour; and the outermost one is double the length of the other four. The corolla-tube and beneath the petals are bright pink in colour; but the upper surface of the petals is white. Five stamina are seen outside the flower, and have very short filaments. The pistil is a quarter of the way down the length of the tube. The flowers and stalks seem much eaten away.—J. A. G.]

Plate XLVII. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Calyx and pistil; fig. 4. Transverse section of ovary; fig. 5. Fruit advanced towards maturity.

7. Oldenlandia Heynei, Wight and Arn. Prod. Fl. Pen. Ind. Or. 416.—*Hedyotis Heynei*, R. Br., Wall. Cat. 867. *H. dichotoma* ?, A. Rich. Fl. Abyss. i. 361; App. Speke's Journ. 636.

Hab. Uganda and Karagué, 1862, *Col. Grant!* Also in India and Natal.

[A bushy plant, growing in plantain-groves, from 6 to 8 inches high, the stems growing flatly on the ground. Found from 2° S. to 2° N. lat. The four stamina are inserted in the throat of the corolla, which is white with a circle of brown spots inside. The flowers fall very early. Stems green, smooth, and swollen at the joints.—J. A. G.]

Allied probably to *O. Heynei* is another *Oldenlandia* with larger capsules, gathered by Col. Grant at Madi, December 1862, the *Hedyotis* no. 2 of App. Speke's Journ. 636 [a straggling plant, found in the bogs about Madi, in flower and fruit during December.—J. A. G.], and apparently identical with a plant collected by Mr. Mann in W. Tropical Africa. Our only specimen unfortunately does not retain a fully developed corolla, so that I prefer to leave it undescribed until the group comes to be worked up for the Flora of Tropical Africa.

8. Oldenlandia parviflora.—*Kohautia parviflora*, Benth. in Fl. Nigr. 403.

Hab. Kazeh, 5° S. lat., alt. about 4000 feet, *Col. Grant!*

[Common weed at 5° S. lat., growing in the fields; bushy, with long root.—J. A. G.]

9. Oldenlandia effusa, Oliv., sp. nov. Caule gracili, dichotome ramoso, glabro; foliis (superioribus) linearibus, acuminatis, margine revolutis, tenuissime pubescentibus glabratisve; stipulis setaceis; panicula ampla, laxe effusa, dichotoma; pedunculis filiformibus, tenuiter pilosulis; calycis limbo 4-partito, lobis lineari-subulatis, ovario longioribus; corolla lilacina, tubo subgracili, lobis ovatis 2–3-plo longiore; staminibus inclusis.

Herba diffusa, verisimiliter 2–2½ ped. alta. *Caulis* teres, lævis, glaber, dichotome ramosus. *Folia* patentia, 1–2 poll. longa (inferiora non vidi), $\frac{1}{6}$–$\frac{1}{5}$ poll. lata. *Pedicelli* $\frac{3}{4}$–1½ poll. longi. *Flores* ½ poll. longi. *Calyx* subglaber v. lobis erectis ciliolatis. *Fructus* . . . .

Hab. Banks of the M'géta, 7° 42′ S. lat. (*Hedyotis* no. 4, App. Speke's Journ. 636), *Col. Grant!*

Allied to No. 515, hb. Kotschy, in which, however, the calyx-teeth are relatively very much stouter.

[Grows rather decumbently on the edge but out of water, at 7° 20′ S. lat. Flowers in October, delicate and of a lilac colour.—J. A. G.]

Plate XLVIII. fig. 1. Flower; fig. 2. Same, calyx-limb removed and corolla laid open; fig. 3. Calyx and pistil; fig. 4. Anther; fig. 5. Stigma; fig. 6. Transverse section of ovary.

10. Mussænda luteola, Delile, in Cailliaud, Cent. de Plantes d'Afrique, 65, pl. 1. fig. 1; Bot. Mag. tab. 5573.—*Mussænda*, sp. nov., App. Speke's Journ. 636.

Hab. Gani and Madi, flower and fruit, Dec. 1862, *Col. Grant!*

The figure cited of 'Botanical Magazine' was taken from specimens grown at Kew from seed brought home by Col. Grant. We have it also from the White Nile, communicated by Consul Petherick.

[Shrub amongst rocks and on the slopes of ravines at Gani and Madi in December. From one side of the rose-bud-like calyx there is a yellow leaf, which is ribbed in a peculiar manner; but this appendage is only found upon the more central calyces. Corolla canary-yellow, with long tube, which conceals the five stamina. The leaves, differently formed from the appendage of the calyx, grow in tufts on the stem, the bark of which is brown, rough, and easily peels off. It is a hardy plant, and grows in the above localities in great profusion.—J. A. G.]

11. Randia dumetorum ?, Lam.; DC. Prod. iv. 385; App. Speke's Journ. 636.—

Gardenia dumetorum, Retz.; A. Rich. Fl. Abyss. i. 354. A single specimen, without either flower or fruit, may belong to this species.

Hab. Madi, Feb. 1863, *Col. Grant!*

R. dumetorum is a common Indian species; and we have specimens of perhaps the same from Mozambique.

[A prickly shrub at 3° N. lat., unknown to our men. Fruit the size of a small nut; four-celled, ripe in February; grows in sandy soil.—J. A. G.]

12. GARDENIA LUTEA, Fresenius, in Mus. Senck. ii. 167; App. Speke's Journ. 636.

Hab. Madi, in flower Feb. 1863 (leafless specimen), *Col. Grant!* Also in Abyssinia.

[Shrub 10 feet high, common everywhere. Its branches are so angular that there is not one foot of them straight. The thorns, in whorls of three, are blunted and woody. Leaves shining dark green; corolla fleshy, and changes from white to yellow as it gets exposed. Flower scented. Fruit when ripe is 3 inches long by 1 across; its surface is like that of a rough date, not edible, six-celled, numerously seeded; and the seeds smell richly of dried figs, each seed enclosed in a transparent glutinous coating. It is a first-rate fence against wild animals in Madi; a single branch closes a doorway against man and beast. The natives cure hæmaturia (blood in the bladder) by drinking a decoction of its roots boiled in *Sorghum*-flour, and call the shrub "millæmathembo" and "kolōlah."—J. A. G.]

13. PLECTRONIA VENOSA, Oliv., sp. nov. Arbor glabra; ramulis teretibus, novellis compressiusculis; foliis petiolatis, ovato- v. oblongo-ellipticis lanceolatisve, subacute v. obtuse acuminatis, basi cuneatis rotundatisve, nervo medio secundariisque lateralibus subtus prominentibus, venulis subtransversis; cymis axillaribus, subglobosis, densis, breviter pedunculatis, pedunculo recurvo v. patente; pedicellis primum brevissimis, fructiferis baccam subæquantibus; calyce campanulato, glabro, 4-dentato; corolla brevi, glabra, lobis tubo paulo brevioribus, fauce pilosula; staminibus breviter, stylo longiuscule exserto; bacca sæpius abortu 1-loculari, subglobosa, interdum biloculari late obcordata.—*Canthium*, sp., App. Speke's Journ. 636.

Rami graciles, crassitie pennæ corvinæ, ultimi compressiusculi, obsolete ferrugineo-puberuli. *Folia* 4–5 poll. longa, 1–2 poll. lata; petiolus $\frac{1}{8}$–$\frac{1}{4}$ poll. *Stipulæ* lanceolato-subulatæ, caducæ. *Cyma* multiflora, 1 poll. diam.; pedunculus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Flores* (alabastro) $\frac{1}{4}$ poll. longi. *Baccæ* uniloculares pisi magnitudine, biloculares 5 lin. latæ.

Hab. Madi, flower and fruit, Dec. 1862, *Col. Grant!*

[Tree in fruit December at 3° N. lat. Fruit in thick clusters of hard, 1–2-seeded berries.—J. A. G.]

Plate XLIX. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamen; fig. 4. Pistil and calyx; fig. 5. Vertical, and fig. 6. Transverse section of ovary; fig. 7. Fruit, laid open.

14. FADOGIA FUCHSIOIDES, Welw. MS. in herb. Frutex glaber; ramulis trigonis; foliis ternis, obovato-ellipticis v. late ellipticis, obtusis v. obtuse apiculatis, glabris, brevissime petiolatis; floribus axillaribus, folio brevioribus v. subæquilongis, solitariis v. pedunculo bifido geminatis; calyce truncato, dentibus obsoletis; corolla tubulosa, tubo extus glabro, intus piloso, lobis 6–7 refractis apiculatis 2-plo longiore; staminibus exsertis; stylo crassiusculo, apice attenuato; stigmate capitato, calathiformi-dilatato.

Folia subcoriacea, reti venularum inconspicuo, 2–2$\frac{1}{2}$ poll. longa, 1$\frac{1}{4}$–1$\frac{3}{4}$ poll. lata; petiolus 1–2 lin. v. folium subsesssile. *Stipulæ* breves, subulatæ, persistentes; vagina brevissima, primum ciliata. *Pedunculus* simplex vel bifurcatus, $\frac{1}{2}$–$\frac{3}{4}$ poll. longus, glaber, in calycem gradatim dilatatus. *Corolla* $\frac{3}{4}$–1 poll. longa, lobis

$\frac{1}{4}$–$\frac{1}{3}$ poll. longis. *Antheræ* subsessiles, fauci insertæ, deinde recurvæ. *Stylus* exsertus. *Drupa* $\frac{1}{2}$ poll. diam., subglobosa, pyrenis 6 v. paucioribus.

Hab. Karagué, fruit only ("*Rubiacea* in fruit," App. Speke's Journ. 636), March 1861, *Col. Grant!* Found also in Angola by Dr. Welwitsch, from whose specimens the figures of the flower and inflorescence are taken.

[Shrub on the Karagué hills, in fruit during March. Stems erect; leaves in whorls of threes. Fruit a black berry, stalked, and growing from the leaf-axils, showing by its form the six cells.—J. A. G.]

Plate L. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamen; fig. 4. Pistil, the ovary in vertical section; fig. 5. Transverse section of ovary.

15. Ixora (Pavetta) ternifolia, Hook. fil. MSS. Frutex subglaber; foliis petiolatis, ternatis, oblanceolatis, breviter obtuse acuminatis, basi angustatis, glabris, margine (in sp. exsicc.) revolutis, nervo medio lateralibusque subtus prominulis, reti venularum inconspicuo; cymis multifloris, terminalibus, puberulis, folia vix superantibus; pedicellis calyci æquilongis; floribus tetrameris; calycis lobis rotundatis; corollæ lobis oblongis, obtusis, reflexis, tubum tegentibus, fauce pilosa; staminibus exsertis; stylo elongato, clavato-cylindraceo.

Rami subtrigoni, glabri v. ultimis puberulis. *Folia* membranacea, 2–4 poll. longa, 1–1$\frac{1}{4}$ poll. lata; petiolus marginatus, brevis, $\frac{1}{6}$ poll. longus v. brevior. *Stipulæ* vaginantes, dentibus subulatis. *Cymæ* 2 poll. latæ, subsessiles; pedunculis pedicellisque puberulis. *Calyx* campanulatus, puberulus, limbo 4-partito, lobis rotundatis. *Corolla* alba, tubo $\frac{1}{4}$ poll. longo, lobis æquilongis, reflexis, fauce dense pilosa. *Stamina* exserta, filamentis brevibus; antheris linearibus, acutis, deinde tortis. *Fructus* . . . .

Hab. Karagué, in flower, Feb. 1862 (*Stylocoryne*, sp., App. Speke's Journ. 636), *Col. Grant!*

[Shrub, by water, Karagué hills, having the appearance of our evergreens. Stem erect, angular; branches and leaves in whorls of threes; leaves with a shining and glossy-green surface, deeply indented from underneath. Inflorescence in rich clusters of white jasmine-scented flowers all over the plant, the pendulous petals giving them a graceful form. Flowers in February.—J. A. G.]

Plate LI. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamen; fig. 4. Vertical section of calyx and ovary; fig. 5. Pistil and calyx-tube; fig. 6. Transverse section of ovary; fig. 7. Ovule.

16. Ixora (Pavetta?), sp., in fruit only.—*Psychotria*? sp. of App. Speke's Journ. 636. Not finally determinable.

Hab. Madi, Dec. 1862, *Col. Grant!*

["M'sweet'æ," a shrub on the bank of a rocky burn at Madi; grows 10 feet high, with a trunk of 10 inches circumference; the wood is straight, and used for building huts. The fruit, in December, is a scarlet berry, the size of a red currant; the pulp is sweet and pleasant, though not eaten by the natives. The mark of the calyx is generally not central, but upon the lowest surface of the berry. The leaves are of a dark dull-green colour, and much paler beneath; both surfaces are raised in dark-green minute blisters.—J. A. G.]

17. Ixora (Pavetta), sp. ?, in leaf only.—*Rubiacea* no. 740, App. Speke's Journ. 636.

Hab. Madi, Jan. 1863, *Col. Grant!*

[Tree, with 30 inches circumference of trunk. Bark yellow and scaling. Wood very light. The upper and lower surfaces of the leaves are almost similar; they are a span long, and marked longitudinally with black specks. Inflorescence in January at 3° N. lat., from the axils of the leaves, similar to that of *Dombeya multiflora*, and white. Native name "m'poo-heeoo." The root is used medicinally for swollen

limbs; its powdered charcoal is rubbed into incisions made in the leg while sitting under the tree.—J. A. G.]

18. IXORA (PAVETTA) ABYSSINICA, Fresenius, in Mus. Senck. ii. 166.—*Pavetta*, sp., 160, App. Speke's Journ. 636.

Var. Folia elliptica, breviter obtuse apiculata, utrinque subscabride hirtella; calyx hirtus, lobis subulatis, tubo duplo longioribus; corolla tubo extus hirtello, lobis oblongis obtusis 4–5-plo longiore.

Hab. Karagué, in flower, Dec. 1861, *Col. Grant!*

[Shrub, by water, Karagué. Inflorescence nearly a corymb. Flowers white, erect, platter-shape, with long tube; calyx diminutive; the four stamina are exserted over the reflexed divisions of the corolla. Leaves leathery to the touch. In flower December.—J. A. G.]

19. COFFEA ARABICA, L.

[The native coffee was first brought to us at Karagué by the Wahia race, who market there; it is carried in bundles (made of plantain-leaf) the shape and size of an ordinary wine-bottle. We found it growing wild, and certainly never introduced, near the Victoria Nyanza lake at Witchroo, in May 1862, when it was in flower and scarlet berry. The bushes were 10 to 15 feet high, and afforded shade; the branches were arched over head from the weight of this and all previous year's fruit. The roots arched above and out of the ground, extending even further than the branches. It grew on red clay soil, which was much washed away by constant rain in this equatorial region. The inhabitants do not use the berry in decoction, like we do; they chew it, as an allayer of hunger and thirst—a soother; and I also found it have a pleasing effect if chewed. We saw no coffee equal in size to Ceylon Jackal-coffee; what was observed was an undeveloped bean with the husk on. I therefore infer that the bean is gathered long before it has come to maturity; for it readily softens in the mouth. We found some huts by the side of the lake stored with quantities of it, but did not meet with it in any other portion of our route.—J. A. G.]

20. SPERMACOCE DIBRACHIATA, Oliv., sp. nov. Herba 1–2-pedalis, erecta, scabrida; caule folioso, hispido; foliis lineari-oblongis, acutis, supra glabratis, subtus in nervo medio hispidis; floribus in capitula multiflora, involucrata, pedunculata, terminalia dispositis; bracteis duabus oppositis, basi in involucrum hemisphæricum hispidum connatis; floribus tetrameris, in receptaculo brevissime pedicellatis, bracteolis linearibus paleaceis intermixtis; calycis limbo 4-partito, lobis elongatis, lineari-subulatis, rigidiusculis, scabridis; corollæ tubo gracili, lobis oblongo-lanceolatis, acutiusculis, apice setulosis; fructu oblongo-obovoideo, calycis limbo persistente coronato, lineis glandulosis, immersis notato.

Caulis erectus, ramosus, 1–2-pedalis, pilis subpatentibus subsparsis hispidus. *Folia* adscendentia, firmula, 2–3 poll. longa, $\frac{1}{3}$–$\frac{1}{2}$ poll. lata, radicalia probabiliter latiora. *Stipulæ* vaginantes, dentibus setiformibus. *Pedunculi* erecti, 3–4 poll. longi (in sp. Grant.). *Bracteæ* involucri $1\frac{1}{2}$–2 poll. longæ, divaricatæ; involucrum $\frac{3}{4}$–1 poll. diam., hemisphæricum, hirsutum, receptaculo plano, paleis anguste linearibus bracteolato. *Calyx* lobis $\frac{1}{4}$ poll. longis. *Corolla* pollicem longa, glabra, tubo gracillimo. *Stamina* exserta, fauci glabræ inserta. *Stylus* filiformis, stigmate capitato bilobo exserto. *Fructus* $\frac{1}{8}$ poll. longus, lineam latus.

Hab. Karagué, Feb. 1862 (*Spermacoce* no. 2, App. Speke's Journ. 636), *Col. Grant!* A closely allied, if not specifically identical, plant occurs in the Manganya hills, Zambesia, in which the peduncles (last internode under the involucral bracts) vary from an inch or two to $\frac{1}{2}$ foot in length.

[Twelve inches high. Flowers (February) sky-blue; after they fall off, the sepals become brown and

almost thorny. The white anthers are level with the top of the corolla. Stem and leaves rough with white hair; the latter feel like a file.—J. A. G.]

Plate LII. fig. 1. Involucre, detached; fig. 2. Single flower, with bracteoles; fig. 3. Fruit; fig. 4. Vertical section of ovary, with style and stigma; fig. 5. Transverse section of fruit; fig. 6. Seed.

21. Spermacoce Kotschyana, Oliv., sp. nov. Erecta, simplex v. parce ramosa; caule tetragono, glabrato v. angulis lineatim elevatis scabrido; foliis linearibus acuminatis, plus minus utrinque setuloso-scabris, pagina superiore nonnunquam glabrata; floribus parvis, capitatis, capitulis bracteatis in axillis quasi verticillatim dense congestis, foliis patentibus brevioribus; pedicellis brevissimis, bracteolis anguste linearibus paleaceis onustis; calycis tubo glabro v. sursum cum limbo 3–4-fido cellulari-piloso; corolla minuta, tubo lobis calycis æquilongo, limbo sæpius 3-lobo, lobis brevibus ovatis; capsula limbo calycis coronata, septo libero 0; seminibus testa lævi nitente pallide brunnea.

Caulis ½–1½ ped., erectus, simplex v. ramosus, basi nudus. *Folia* sæpius 1½–2½ poll. longa, in nodis floriferis approximata. *Capitula* dense congesta, multiflora, axillaria et terminalia, verticillastra 1–1½ poll. lata efficientia; bracteis foliaceis, basi subtus tomentosis. *Vagina* stipularis, hirta, margine setaceo-multifida. *Calyx* tubo glabro v. superne piloso, lobis 3 v. 4 linearibus v. lineari-oblongis, dense cellulari-pilosis. *Corolla* tubo brevi, subglabro, lobis minutis, late ovatis. *Stamina* fauci inserta. *Stigma* bilobum.

Hab. Madi (*Spermacoce* no 3, App. Speke's Journ. 636), in advanced flower and fruit Dec. 1862, *Col. Grant!* Also in Fesoglu, *Kotschy*!

I may be mistaken in supposing this species to be undescribed.

[Found near water in the low grounds of Madi; flowers in December.—J. A. G.]

Plate LIII. fig. 1. Flower with paleaceous bracteoles; fig. 2. The same, calyx-limb removed and corolla laid open; fig. 3. Calyx; fig. 4. Fruit after dehiscence; fig. 5. Seed, back and front.

22. Spermacoce stricta, Linn. fil.; DC. Prodr. iv. 554, var.—*S. natalensis*?, App. Speke's Journ. 636. For synonymy *vide* Benth. Fl. Hongkong 163.

Hab. Ukidi forest, Nov. 1862, *Col. Grant!*

A slender glabrous variety, the capsules thinly and shortly hairy towards the apex.

[An erect-growing, generally single-stemmed plant, on low sandy ground at 2°–3° N. lat. Flowers in November.—J. A. G.]

23. Spermacoce ampliata.—*Hypodematium ampliatum*, A. Rich. Fl. Abyss. i. 349. Annua; caule erecto, parce ramoso, tetragono, hirsuto; foliis lanceolatis v. lineari-lanceolatis, acuminatis, basi angustatis, inferioribus breviter petiolatis, utrinque scabrido-hirtellis; floribus dense capitatis, quasi verticillatis v. terminalibus, bracteatis, calycinis, laciniis lineari-lanceolatis, ciliatis; corolla infundibuliformi calyce 2-plo longiore; fructu basi circumscisso, coccis intus dehiscentibus a septo deinde solutis.—*Mitracarpus ampliatus*, Hochst. hb. Schimp. Abyss.; *S. Ruelliæ*, App. Speke's Journ. 636.

Caulis simplex v. parce ramosus, 1½–2½ pedalis, pilis brevibus patentibus hirsutus v. glabratus. *Folia* patentia, 2–4 poll. longa, ⅓–⅔ poll. lata. *Vagina* stipularis, hirta, margine setoso-laciniata. *Capitula* ½–1 poll. diam., bracteata; bracteis foliaceis, patentibus. *Corolla* glabra, ⅓–½ poll. longa, sursum dilatata; lobis ovato-lanceolatis.

Hab. Unyoro, in flower, August 1862! *Col. Grant!* Also in Abyssinia. *S.* (*Hypodematium*) *sphærostigma* is doubtfully distinct.

[Found in flower in August, near cultivation, at 2° N. lat. A bushy plant.—J. A. G.]

Plate LIV. fig. 1. Detached flower; fig. 2. The same, corolla removed; fig. 3. Transverse section of ovary; fig. 4. Capsule (when mature the cocci separate transversely at the base from the axis); fig. 5. Seed.

24. SPERMACOCE HEBECARPA ?—*Borreria hebecarpa*, Hochst., in hb. Schimp. Abyss.; *Mitracarpum* no. 1, App. Speke's Journ. 636. A single small specimen, which must remain doubtful, at least until tropical African Rubiaceæ shall have been worked up.

Hab. Ukidi, Nov. 1862, *Col. Grant!*

[Diminutive plant, growing upon sandy soil near water in Ukidi. In flower November.—J. A. G.]

25. MITRACARPUM SENEGALENSE, DC. Prod. iv. 572.

Hab. Unyoro, Nov. 1862 (*Mitracarpum* no. 2, App. Speke's Journ. 636), *Col. Grant!* Also in Abyssinia and West Tropical Africa.

[Found at 5° S. and 2° N. lat., not far from water. In flower November.—J. A. G.]

26. RUBIA CORDIFOLIA, L.; DC. Prod. iv. 588; App. Speke's Journ. 636.

Hab. Karagué, Dec. 1861, *Col. Grant!* Occurs in Abyssinia and South Africa, and widely spread in Tropical Asia.

[Creeps amongst the bushes of the Karagué ravines. The whole plant clings most tenaciously to every thing it touches. The five stamina attached to the corolla are mere black specks. Flowers here in December.—J. A. G.]

Besides the Rubiaceæ enumerated above, Col. Grant collected specimens, not in a state for determination, of:—

1. Probably a *Tricalysia* (*Rosea*, Kl.), in bud, Madi, Dec. 1862.
2. *Vangueria* ?, without either flower or fruit, Madi, Dec. 1862.

[Bushy plum-tree, 3 to 12 feet high, and to 30 inches circumference of trunk. Bark grey, with black blotches, as if charred. Branches distinctly jointed. Leaves in two or more pairs, broadly lanceolate, about 3 inches long, but a good deal eaten away. The plum is greengage-size and colour, sticky pulp, pleasant-tasted, with one stone, the eighth of a sphere; but there may be more stones. The kernel is a sweet bitter. Found at 3° N. lat.; called "ceemampeea" (Kin.) and "m'koolookootoot'oo" (Keeao). Wood not used. There is more to eat of this plum than any other yet seen in Africa; and if introduced, it would prove valuable.—J. A. G.]

COMPOSITÆ.

1. GUTENBERGIA CORDIFOLIA, Benth. MS. in hb. Kew. Herba erecta, ramosa; caule tereti, striato, appresse sericeo; foliis superioribus sessilibus, ovatis e basi cordata amplexicaulibus, late acutatis, obsolete denticulatis, supra scabrulis, subtus albido-tomentosis; capitulis purpureis, laxe cymosim paniculatis, pedunculatis; bracteis involucri tomentosi interioribus elliptico-oblongis, margine scariosis, obtusiusculis, exterioribus brevioribus, lineari-lanceolatis; acheniis obovoideis, glabris, apice anguste areolatis, obtuse 5-costatis et transverse rugosis.

Caulis 1½–2 ped. alt., teres, striatus, minute appresse sericeus. *Folia* caulina 1½–3 poll. longa; radicalia . . . . *Capitula* ⅓ poll. diam.; pedicelli incano-sericei, ½ poll. longi v. breviores, in cymas oligocephalas pedunculatas disposita; pedunculis erectis, inæqualibus, simplicibus v. furcatis, 1½–4 poll. longis. *Involucrum* campanulatum; bracteis appressis, interioribus ⅙–¼ poll. longis. *Pappus* 0. *Corolla* gradatim ampliata, 5-fida, lobis linearibus acutis.

Hab. Unyoro (*Vernonia* no. 9, App. Speke's Journ. 637), Oct. 1862, *Col. Grant!*

[Common weed, 1 to 2 feet high, with mauve flowers, in October, at Unyoro.—J. A. G.]

Plate LV. fig. 1. Involucre; fig. 2. Floret; fig. 3. Stamens; fig. 4. Style-branches; fig. 5. Achene.

2. VERNONIA PERROTTETII, Sch. Bip. in Walp. Rep. ii. 947. Annua, erecta e basi lignosa, $1\frac{1}{2}$–$2\frac{1}{2}$ ped. alta; ramis sursum sæpius confertis, pubescentibus; foliis adscendentibus, anguste linearibus, revolutis, scabridis; capitulis solitariis, pedunculatis, terminalibus; involucro campanulato, tomentoso; bracteis multiserialibus, gradatim longioribus, arcte appressis, acutis, exterioribus brevioribus lanceolatis, interioribus lineari-lanceolatis; receptaculo alveolato, glabro; corolla inæqualiter lobata; acheniis 7–9-costatis, glandulosis, costis hispidis; pappo exteriore anguste squamiformi brevissimo, interiore setaceo, barbellato.—*Polydora stœchadifolia*, Fenzl, in Flora, 1844, 312; *V. stœchadifolia*, Sch. Bip. in Walp. Rep. vi. 98; *Webbia serratuloides*, DC. Prod. v. 72, *fide* Sch. Bip. in Schweinf. Fl. Æthiop. 162; *Vernonia* no. 2, App. Speke's Journ. 637.

Caulis erectus, basi sæpius simplex, superne ramos axillares, adscendentes, numerosos, subfastigiatos emittens: ramis costatis, tenuiter appresse pubescentibus. *Folia* $\frac{3}{4}$–2 poll. longa, obtusiuscula, sæpius revoluta, strigillosa v. glabrata. *Capitula* purpurea, ad apices ramorum solitaria, $\frac{1}{2}$–1 poll. diam.; bracteis involucralibus 5–6-seriatis, apice viridiusculis v. interioribus purpureis, valide 1-nervosis. *Antheræ* basi breviter sagittatæ, apice acutæ.

Hab. Madi, Dec. 1862, *Col. Grant!*

Apparently widely spread in North Tropical Africa.

[Above a foot in height, growing in dry ground at Unyoro in the woods. The people mix the ashes of this and *Hygrophila spinosa* with water, and then extract salt by evaporation.—J. A. G.]

Plate LVI. A. fig. 1. Floret; fig. 2. Stamens; fig. 3. Style-branches; fig. 4. Setæ of pappus.

3. VERNONIA TURBINATA, Oliv. & Hiern, in Fl. Trop. Afr. iii. (ined.). Lignosa; ramis teretibus striatis, incano-tomentosis; foliis (ramulorum) subsessilibus, elliptico-oblongis, obtusis v. late acutiusculis, supra scabris, subtus tomentosis; capitulis turbinatis, breviter pedunculatis v. subsessilibus, in paniculas angustas terminales dispositis; bracteis involucri 5–7-seriatis, lineari-lanceolatis, dense tomentosis, apice apiculo rigido, glabro, brevi armatis; corolla tubulosa purpurea; antheris basi acute productis; acheniis 4–5-angulatis, inter costas sparse setulosis; pappo exteriore brevissimo squamiformi, interiore setaceo caduco.

Capitula $\frac{2}{3}$ poll. lata, dense tomentosa. *Corolla* sursum leviter dilatata, lobis tenuiter pilosis.

Hab. Madi, in flower (*Vernonia* no. 5, App. Speke's Journ. 637), Dec. 1862, *Col. Grant!*

Our single specimen hardly suffices to enable me to describe the plant. It consists of a single lateral flowering branch, with a portion of the axis from which it springs terminating in a short, leafless, somewhat racemose panicle; the heads subsessile on peduncles varying to an inch or so.

[Erect, woody, tall plant, found on dry ground in the Madi woods, in flower, December.—J. A. G.]

Plate LVI. B. fig. 1. Involucre; fig. 2. Floret; fig. 3. Stamens; fig. 4. Setæ of pappus.

4. VERNONIA PETERSII, Oliv. & Hiern, in Fl. Trop. Afr. iii. (ined.). Herba $1\frac{1}{2}$–2 ped.; caule erecto, ramoso, crispe pubescente; foliis lineari- v. ovali-oblongis, oblanceolatisve, acutis v. obtusis, mucronatis, subsessilibus; capitulis campanulato-hemisphæricis, ∞-floris,

in paniculas laxe cymosas dispositis; bracteis involucri laxe pluriserialibus acutis, exterioribus sericeo-pilosis, apice recurvis; receptaculo alveolato; acheniis obconicis, inæqualiter 4–5-gonis, setulosis, faciebus glandulosis v. deinde tuberculato-scabridis; pappo exteriore squamiformi squamulis lanceolatis denticulatis, interiore setiformi barbellato caduco.—*Crystallopollen latifolium*, Steetz, in Peters, Mossamb. Bot. 364, tab. 48 *a*.

Folia caulina, 1–1½ poll. longa, ⅓–½ poll. lata, scabrido-hispida. *Capitula* circ. 50-flora, ½ poll. diam., subsessilia v. pedunculata.

Hab. Karagué, in flower, Dec. 1861, *Col. Grant!* Also in Zambesi-land.

[1 to 2 feet high, erect, growing near cultivation, at an altitude of 4000 feet. Flowers button-like and white. Karagué, December.—J. A. G.]

5. Vernonia violacea, Oliv. & Hiern, in Fl. Trop. Afr. iii. (ined.). Herba 2–3-pedalis; caule erecto, ramoso, costato-angulato, sericeo-pubescente; foliis caulinis obovato-oblongis, obtusis, crenato-dentatis, parce pubescentibus glabratisve, subsessilibus; capitulis hemisphæricis, multifloris, pedunculatis, in paniculas laxas cymosas dispositis; involucri bracteis 3–4-serialibus, subappressis, lanceolatis, acutis; receptaculo alveolato; acheniis sæpius tetragonis, turbinatis, setulosis; pappo exteriore squamiformi squamulis lanceolatis denticulatis, interiore setiformi scabrido, violaceo.

Folia caulina ad 3 poll. longa. *Pedunculi* ½–3 poll. longi, erecti, pubescentes v. puberuli. *Capitula* ½–⅓ poll. lata; involucri bracteis apicem versus purpurascentibus parce tomentellis.

Hab. Madi, in flower, Dec. 1862 (*Vernonia* no. 7, App. Speke's Journ. 637), *Col. Grant!*

[Upwards of 2 feet high, growing in the woods of Madi. In flower December. Common there.—J. A. G.]

6. Vernonia Smithiana, Less. in Linnæa, 1831, 638 (ex descr.).—*Webbia? Smithiana*, DC. Prod. v. 72. *Vernonia* no. 4, App. Speke's Journ. 637.

Hab. Karagué, Dec. 1862, *Col. Grant!*

[Slim, erect plant, 1 foot high and upwards; found at 4000 feet altitude. Flowers in December at Karagué, in golden heads.—J. A. G.]

7. Vernonia karaguensis, Oliv. & Hiern, in Fl. Trop. Afr. iii. (ined.). Herba erecta, 2–3-pedalis; caule tereti, striato, pilis brevibus crispulis scabrido; foliis caulinis lanceolatis, acutis, serrulatis, supra setuloso-scabris, subtus crispe pubescentibus; capitulis subturbinatis, subsessilibus, in cymas corymbosas terminales dispositis; involucri bracteis pluriserialibus, anguste oblongis, subacutis, exterioribus apiculo colorato subpatente; achæniis 5-costatis, costis glabris, inter costas glanduloso-setulosis; pappo exteriore brevissimo, interiore deciduo, albo, barbellato.

Caulis crassitie pennæ cygni. *Folia* 1½ poll. longa. *Capitula* ¼ poll. diam., in pedunculis subunilateralibus racemosim cymosis.

Hab. Karagué, Feb. 1862 (*Vernonia* no. 10, App. Speke's Journ. 637).

[Upwards of 2 feet high, with a coarse thick stem and variegated flowers, purple and white, during February. Found at 5000 feet altitude, Karagué.—J. A. G.]

8. Vernonia Thomsoniana, Oliv. & Hiern, in Fl. Trop. Afr. iii. (ined.). Frutex; ramis obsolete angulatis, puberulis; foliis oblongo-ellipticis, acutis, basi attenuatis, obso-

lete serrulatis, glabris v. subtus sessiliter glandulosis, puberulis; petiolo anguste alato; capitulis campanulato-oblongis, numerosis, brevissime et graciliter pedicellatis, in paniculas densas corymbosas dispositis; involucri bracteis pluriserialibus, coriaceis, exteriobus parvis ovatis, interioribus obovato-oblongis, obtusis, eroso-denticulatis, glabratis, pallide flavido-virescentibus, caducis; antheris basi acute productis; acheniis 5-costatis, inter costas parce glandulosis; pappo simplici, albo, scabrido.

Folia petiolata, lamina 3–4 poll. longa, 1–1¼ poll. lata, subtus nervo medio venulisque lateralibus prominentibus; petiolus ½ poll. longus. *Inflorescentia* terminalis, ½ ped. lata; capitula ⅙ poll. diam. *Receptaculum* angustum, nudum.

Hab. Madi, Dec. 1862 (*V. Vogeliana*, Thoms. in App. Speke's Journ. 637), *Col. Grant!*

[This is one of the many plants which the natives extract salt from. Found at Madi, on the bank of the burn, flowering in December.—J. A. G.]

9. Vernonia (Stengelia) Grantii, Oliv. in Fl. Trop. Afr. iii. (ined.) Frutex; ramulis striatis, ultimis puberulis; foliis oblongo-lanceolatis, acutiusculis, irregulariter serratis subintegrisve, supra scabridis v. hispidulis, subtus tomentellis, deinde glabratis, petiolatis; capitulis breviter pedunculatis, in cymas oligocephalas (4–6) terminales folia vix superantes dispositis; involucri bracteis intermediis appendice terminali ovata acuminata medio nervosa instructis; acheniis 20-striatis, pilis brevibus adscendentibus hispidulis; pappo setis liberis, scabris.

Folia 4–6 poll. longa, 1½–2 poll. lata; petiolus ½–1 poll. longa. *Capitula* 1½ poll. diam., involucris incano-puberulis.

Hab. Unyoro (*Stengelia* no. 2, App. Speke's Journ.), *Col. Grant!*

[A hardy bush, found in the Unyoro forests. Fruits in November.—J. A. G.]

Plate LVII. fig. 1. Floret; fig. 2. Stamens; fig. 3. Style; fig. 4. Seta of pappus.

10. Vernonia (Stengelia) Tenoreana ?, Oliv. in Fl. Trop. Afr. iii. (ined.).—*Candidea senegalensis* ?, Tenore, in Atti del R. Acc. Sc. iv. t. 1, 2. *Stengelia* no. 1, App. Speke's Journ. 637.

Too near, and the specimen too imperfect, to justify separation of this species. It must remain doubtful at present. The leaves of Col. Grant's plant are closely tomentose below, the only branch terminating in two capitula 1½ in. diam., the tomentose involucral bracts terminating in a lanceolate acute appendix, the inner bracts equalling the reddish-tawny pappus.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[Found near ravines at an altitude of 5000 feet. The upper branches are green, streaked with black. Unblown florets a pale purple; full-blown white, in December.—J. A. G.]

11. Vernonia (Stengelia) pumila, Kotschy & Peyritsch, Pl. Tinn. 37, tab. 17 a.—*Stengelia* no. 3, App. Speke's Journ. 637.

Hab. Madi, Dec. 1862, *Col. Grant!*

Gathered by Heuglin, with both white and violet florets, at Bongo, and by Jardin on the Rio Nunez, Senegambia.

[Uncommon plant, found in the woods of Madi. In flower December.—J. A. G.]

12. Vernonia purpurea, Schultz Bip. in hb. Schimp. Abyss. ii. 1197; Walp. Rep. ii. 946.—*V. jaceoides*, A. Rich. Fl. Abyss. i. 376. *Vernonia* no. 6, App. Speke's Journ. 637.

Hab. Madi, Dec. 1862, *Col. Grant!* Found also in Abyssinia, the Manganja range, Zambesia, and in Nigritania.

[Erect, woody, leafy-stemmed plant, found in the woods of Madi. In seed during December.—J. A. G.]

13. Vernonia ambigua, Kotschy & Peyritsch, Pl. Tinn. 35, tab. 17 b.—*Vernonia* no. 3, App. Speke's Journ. 637.

Hab. Madi, Dec. 1862, *Col. Grant!* Found by Heuglin between the rivers Bahr-Dembo and Bahr-Djun, in fields of *Sorghum*, and by Barter in Nigritania.

[Dwarf thistle, bushy, and up to 6 inches; grows in patches, locally, on dry stony ground at Madi, in December.—J. A. G.]

14. Elephantopus scaber, L.; DC. Prod. v. 86.

Hab. Karagué, Feb. 1862, *Col. Grant!* A common tropical weed.

[Two feet high, erect plant; found at an altitude of 5000 feet, flowering in February. Calyx pale green; corolla lilac.—J. A. G.]

15. Ageratum conyzoides, L.; DC. Prod. v. 108.

Hab. Unyoro, Oct. 1862, *Col. Grant!* A common weed throughout the tropics.

[Two feet high. Common near fields at 2° N. lat., where it is in flower in October.—J. A. G.]

16. Dichrocephala latifolia, DC. Prod. v. 372.—*D. abyssinica*, Schultz Bip. in hb.; Schimp. Abyss. i. 176, ii. 949.

Hab. E. African chain, alt. 4700 feet, 1860, *Col. Grant!* Widely spread in Tropical Africa, extending eastward through India to China.

[East-African chain of hills, alt. 4700 feet.—J. A. G.]

17. Grangea maderaspatana, Poir. Encycl. Suppl. ii. 825.

Hab. By the Nile, 14°–15° N. lat., March 1863, *Col. Grant!* Widely spread in Tropical Africa.

[Very brittle stem. Found in March (flowers), at 14°–15° N. lat., growing perfectly flat upon the hard clay of the Nile-bank.—J. A. G.]

18. Erigeron Grantii, Oliv. & Hiern, Fl. Trop. Afr. iii. (ined.). Annua, 1–2-pedalis; caule erecto, basi simplici, folioso, tenuiter pubescente; foliis lineari-oblongis linearibusve, obtusis v. subacutis, basi angustatis, integris v. remote denticulatis, strigulosis, sessilibus; capitulis hemisphæricis, pedicellatis, in cymas laxas corymbosas terminales dispositis; involucri bracteis subbiserialibus, interioribus lineari-oblanceolatis, acuminatis, margine scarioso, exterioribus paucis linearibus tenuiter pubescentibus; receptaculo nudo; floribus radii 1-seriatis, ligulis patentibus, squamis involucri interioribus paulo latioribus; acheniis compressiusculis, anguste obovoideis, setulosis; pappo tenui, 1-seriato, barbellato, albo.

Folia obscure trinervia, 1–2½ poll. longa, ⅛–⅓ poll. lata. *Capitula* ⅓–⅖ poll. diam.; pedicelli ⅕–½ poll. longi.

Hab. Unyoro, Aug. 1862 (*Poloa*? no. 2, App. Speke's Journ. 638), *Col. Grant!*

[A pretty little white-flowering plant, covering fallow ground at 2° N. lat. in August.—J. A. G.]

Plate LVIII. fig. 1. Ray-floret; fig. 2. Style of the same; fig. 3. Seta of pappus; fig. 4. Disk-floret; fig. 5. Stamens; fig. 6. Style.

19. Nidorella microcephala, Steetz, in Peters, Mossamb. Bot. 406.

Hab. 7° 20′ S. lat., 38° E. long. (*Nidorella* no. 1, App. Speke's Journ. 637), *Col. Grant!* Occurs in Zambesia. Nearly allied to *N. auriculata*, DC., of the Cape.

[Erect plant, 1–2 feet high, found everywhere near moisture, at 7° 20′ S. lat. Flowers orange-yellow, in October.—J. A. G.]

20. Conyza ægyptiaca, Ait.; DC. Prod. v. 382.—*C. echioides*, A. Rich. Fl. Abyss. i. 388.

Hab. Unyoro, Oct. 1862, *Col. Grant!*

A widespread weed in Tropical Africa, extending eastward to India, China, and Australia.

[Three feet high, with tapering root; found in flower, October, in Unyoro. Stem lined with green, and waved at its extremity. Flowers greenish yellow.—J. A. G.]

21. Blumea lacera, DC. Prod. v. 436.—*B. Perrottetiana*, DC. *l. c.* 443. *B. Wightiana*, DC. *l. c.* 435. *B. thyrsoidea*, Schultz Bip. in Bot. Zeit. 1866, 166. *B. runcinata*, App. Speke's Journ. 637.

Hab. Unyoro, Oct. 1862, *Col. Grant!* Widely spread in Tropical Africa and Asia, reaching to Australia.

[Field-weed, 4 feet high, by cultivation, Unyoro, October. Stem erect; flowers mauve, bell-shaped and drooping gracefully; outer calyx green, with purple tips. The mauve florets bloom all at one time.—J. A. G.]

22. Laggera pterodonta, Schultz Bip.—*Blumea pterodonta*, DC. Prod. v. 448. *Laggera* (*Blumea*) *purpurascens*, Schultz Bip. in hb.; Schimp. Abyss. *Serratula polygyna*, A. Rich. Fl. Abyss. i. 457, tab. 62. *Conyza ctenoptera*, Kunth, Walp. Rep. vi. 133.

Hab. Unyoro, Oct. 1862, and Karagué, Feb. 1862 (*Blumea* nos. 3 & 4, App. Speke's Journ. 637), *Col. Grant!*

[Hundreds of young flowerless plants of this, resembling lettuce in growth, are by the Unyoro huts, 15th October. Our men do not know its use. 3 to 6 feet high, with an herbaceous stem, smelling between mint and celery. The whole plant makes the hands sticky. Leaves attaining 7 inches by 4. Found also at Karagué; in flower February, at an altitude of 4500 feet.—J. A. G.]

23. Laggera alata, Schultz Bip.—*Blumea alata*, DC. Prod. v. 448.

Hab. Unyoro, not in flower, Nov. 1862, *Col. Grant!*

In the absence of inflorescence, this may possibly prove a misidentification. The species is widely spread in Africa.

[Similar in aspect to *L. pterodonta*; but this plant is not so sticky to the touch, neither does it smell in the same way. Its leaves are quite different, those of the stem quite entire. One specimen only found, not in flower. In dense vegetation on river-banks, Unyoro.—J. A. G.]

24. Pluchea dioscoridis, DC. Prod. v. 450.

Hab. 6° 24′ S. lat., 34° E. long., alt. 2900 feet (*Pluchea* no. 1, App. Speke's Journ. 637), *Col. Grant!*

[Bush, 5 feet high, growing in a brackish-water country. Flowers (November) pink or lilac. The whole plant has a peculiar smell. Found only at Ugogo on the bank of a dry nullah. The people extract salt from its ashes; and nasty bitter stuff their salt is.—J. A. G.]

25. Sphæranthus suaveolens, DC. Prod. v. 370, var. *angustifolia*.—*S. indicus*, Gært. Fruct. ii. 413, tab. 164. fig. 5 (non Linn.). *S. abyssinicus*, Steetz, in Peters, Mossamb. Bot. 411. *S. angustifolius*, Schultz Bip., in Kotschy, hb. Nub. no. 463.

Hab. Madi, Dec. 1862 (*Sphæranthus* no. 1, App. Speke's Journ. 637), *Col. Grant.*

[Found in the wet mud edges of bogs in Madi. Flower (December) a blue or pink-purple button, called "bozeea" by the Wezees, who mash the whole plant, add cold water, and wash their bodies with the mixture when troubled with ague.—J. A. G.]

26. SPHÆRANTHUS POLYCEPHALUS, Oliv. & Hiern, Fl. Trop. Afr. iii. (ined.). Herba ramosissima, tomentosa; ramis striatis, alatis; foliis oblongis lanceolatisve, subacutis, setuloso-dentatis, sessilibus, decurrentibus; capitulis turbinatis, in glomerulos globosos solitarios pedunculatos aggregatis; flore hermaphrodito tubulari-infundibuliformi, in quoque capitulo solitario; involucri bracteis 7–8 membranaceo-scariosis, oblanceolatis v. ovalibus, ciliatis; acheniis compressiusculis v. subteretibus.

Diffusa, ramosissima, verisimiliter 1–2 ped. alta. *Rami* striati; alis denticulatis, tomentosis. *Folia* $\frac{1}{2}$–$1\frac{1}{2}$ poll. longa, tomentosa. *Capitula* composita, sphærica, $\frac{1}{4}$ poll. diam., purpurascentia; pedunculi tomentosi, nudi, $\frac{1}{3}$–1 poll. longi. *Receptaculum* commune ellipsoideum v. ovoideum, $\frac{1}{12}$–$\frac{1}{10}$ poll. longum, basi squamis lanceolatis, subulato-acuminatis, tomentosis, deflexis, $\frac{1}{12}$–$\frac{1}{10}$ poll. longis.

Hab. Zungomero, Oct. 1860 (*S. hirtus*, App. Speke's Journ. 637), *Col. Grant!*

[This plant grows in thick tufts upon dried-up swamps or cracked clay soil near rice-fields, Zungomero. Flowers (October) are like purple buttons.—J. A. G.]

Plate LIX. fig. 1. Common receptacle; fig. 2. Capitulum; fig. 3. Female, and fig. 4. Hermaphrodite floret; fig. 5. Stamens; fig. 6. Style.

27. ACHYROCLINE SCHIMPERI, Schultz Bip. in hb.; Schimp. Abyss. i. 393; A. Rich. Fl. Abyss. i. 428.—*A.* (*Gnaphalium*) *adoënsis*, Schultz Bip. in hb.; Schimp. Abyss. i. 41. *Gnaphalium* no. 1, App. Speke's Journ. 638.

Hab. Karagué, Dec. 1861, *Col. Grant!* Also found in Abyssinia and Zambesia.

[Large bush, with handsome clusters of white soft-looking flowers, growing by watercourses at Karagué, alt. 4000 feet.—J. A. G.]

28. HELICHRYSUM KIRKII, Oliv. & Hiern, Fl. Trop. Afr. iii. (ined.). Erectum a basi suffruticosa; caule folioso, subvirgato, tomentoso; foliis linearibus v. anguste lineari-lanceolatis, apiculatis, marginibus revolutis, subtus albido-tomentosis, supra pilosulis tomentosisve, sessilibus, amplexicaulibus; capitulis late campanulatis, multifloris, laxe corymbosis, ramulos ultimos terminantibus; involucri bracteis multiseriatis, laxe imbricatis, flavido-stramineis, exterioribus brevioribus ovatis, obtusiusculis, intermediis oblongis, acutatis, interioribus linearibus acutis; receptaculo foveolato, glabro; floribus omnibus hermaphroditis; acheniis oblongis, nitidis, glabris, obscure 5–6-angulatis; pappo barbellato, flavido.

Frutex $1\frac{1}{2}$–2 ped. altus; ramis sæpius apicem versus ramulos floriferos fastigiatim emittentibus. *Folia* $\frac{1}{4}$–$1\frac{1}{4}$ poll. longa, approximata. *Capitula* $\frac{1}{2}$–$\frac{2}{3}$ poll. diametro.

Hab. East-coast range, 7° 24′ S. lat., Oct. 1860 (*Helichrysum* no. 1, App. Speke's Journ. 638), *Col. Grant!* Found also in the Maravi country and in the Manganja hills.

[18 inches high, with woody root and stem. Found on the east-coast range of hills at an altitude of 1000 feet, 7° 24′ S. lat. Flowers (October 30, 1860), like our "everlasting flowers," bright yellow and shiny.—J. A. G.]

Plate LXI. fig. 1. Floret; fig. 2. Stamens; fig. 3. Style-branches; fig. 4. Seta of pappus.

29. HELICHRYSUM UNDATUM, Less.; DC. Prod. vi. 198. Herba perennis; caule sim-

plici erecto, inferne folioso, albido-tomentoso; foliis radicalibus ovato-lanceolatis lanceolatisve, acutis, basi in petiolum angustatis, 3–5-nerviis, subtus appresse tomentosis; foliis caulinis superioribus angustioribus acuminatis; capitulis parvis, in cymas terminales umbelliformes v. subhemisphæricas longe pedunculatas aggregatis; involucri bracteis interioribus laxis, oblongis, obtusis, exterioribus ovatis v. ellipticis, apice roseo-coloratis, basi laxe tomentosis; receptaculo alveolato fimbrillato, fimbrillis aurantiacis; acheniis glabris.

Caulis 1½–2 ped. altus, superne nudus. *Folia* radicalia petiolata, 4–5 poll. longa, 1–2 poll. lata; petiolus ad 2 poll. longus. *Cymæ* terminales, 2 poll. diam.; pedicellis tomentosis brevissimis v. involucrum subæquantibus. *Capitula* (in spp. Grantianis) homogama, ¼ poll. diam. *Antheræ* basi attenuatæ.

Hab. Hills of Chogwe, 6° 51′ S. lat., alt. 3000 feet (*Antennaria* no. 1, App. Speke's Journ. 638), Nov. 1860, *Col. Grant!* Occurs also in Zambesia and at the Cape.

[18 inches to 2 feet high. Found on the hills at Chogwe, alt. 3000 feet, 6° 51′ S. lat., November 1860. —J. A. G.]

Plate LXII. fig. 1. Floret; fig. 2. Stamens; fig. 3. Style-branches; fig. 4. Seta of pappus.

30. Porphyrostemma Grantii, Benth. MSS. Herba annua, erecta; caule folioso, superne ramoso striato, hirsuto; foliis alternis, linearibus v. inferioribus ovali-linearibus obtusis apiculatis v. mucronatis, denticulatis, basi angustatis, supra scabridis v. obsolete hirsutis, subtus scabrido-hirtis; capitulis majusculis, laxe paniculatis, pedunculatis, purpurascentibus; involucri bracteis angustissimis, hirto-pilosis, flores subæquantibus; floribus femineis ∞, anguste tubulosis, ore dentatis, hermaphroditis apice setulosis.

Caulis 2–3-pedalis, teres, costatus. *Folia* 2–5 poll. longa, ¼–¾ poll. lata, basi in petiolum alatum angustata. *Pedunculi* erecti, subappresse hirsuti, 1–3 poll. longi. *Capitula* ¾ poll. diam. *Antheræ* basi acute productæ, apice connectivo lanceolato obtusiusculo terminatæ.

Hab. 4° 18′ S. lat., near Mininga (*Erigeron* ??, App. Speke's Journ. 637), *Col. Grant!*

[A bushy, 2-to-3-feet-high plant, found also in October 1860, at 7° 20′ S. lat., in moist places by beds of streams, with round, purple, button-like flowers; a pretty plant. The people of Heeao make salt from its ashes.—J. A. G.]

Plate LXIII. fig. 1. Female floret; fig. 2. Hermaphrodite floret; fig. 3. Stamens; fig. 4. Style; fig. 5. Seta of pappus.

31. Pulicaria crispa, Benth. Gen. Pl. ii. 336.—*Francœuria crispa*, Cass.; DC. Prod. v. 475; App. Speke's Journ. 638.

Hab. By the Nile, 16° N. lat., *Col. Grant!* Widely spread in Northern Africa, extending through Arabia to India.

[Grows locally in bushy masses near cultivation on right bank of the Nile, about lat. 16° N. In seed here April.—J. A. G.]

32. Pulicaria Grantii, Oliv. & Hiern, Fl. Trop. Afr. iii. (ined.). Herba suffrutescens; ramis subvirgatis, teretibus, glanduloso-puberulis; foliis linearibus basin versus angustatis, acutis, pubescenti-tomentosis; capitulis hemisphæricis, longiuscule pedunculatis; pedunculis nudis, striatis, puberulis; involucri bracteis pauciseriatis, lineari-subulatis, pubescentibus; receptaculo subplano, punctato, glabro; ligulis revolutis; floribus hermaphroditis tubulosis, 5-dentatis, dentibus glabris; acheniis pilis erectiusculis, hirtis; pappo

exteriore squamiformi, interiore setaceo, setis circiter 10–15, barbellatis, basin versus attenuatis.

Rami graciles, crassitie pennæ corvinæ. *Folia* $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa, $\frac{1}{10}$–$\frac{1}{8}$ poll. lata. *Pedunculi* 1–3 poll. longi, erecti. *Capitula* $\frac{1}{2}$ poll. diam.

Hab. By the Nile, 16° N. lat., April 1863, *Col. Grant!*

Identified, perhaps incorrectly, with the plant called by Dr. Anderson, in his 'Florula Adenensis,' p. 22, *Varthemia arabica* (*non* Boissier), under which name it occurs in App. Speke's Journ. 638.

[Found in seed, 16th April 1863, on the right bank of the Nile, at 16° N. lat., and at no other part of the journey.—J. A. G.]

Plate LXIV. A. fig. 1. Ray-floret; fig. 2. Disk-floret; fig. 3. Stamens; fig. 4. Style-branches; fig. 5. Setæ of pappus.

33. Anisopappus chinensis, Hook. et Arn. Bot. Beech. 196. Herba annua, erecta; caule, superne ramoso, costato, hirtello; foliis oblongo- v. lineari-ovalibus obtusis, obtuse dentatis, scabrido-puberulis, petiolatis; capitulis hemisphæricis, pedunculatis, laxe corymbosis; involucri bracteis pubescentibus, ovalibus oblanceolatisve, obtusiusculis, exterioribus paucis brevioribus; receptaculo convexo, glabro, paleis lineari-lanceolatis, acutis, carinatis, rigidiusculis, floribus disci paulo brevioribus; acheniis parce setulosis.—*Verbesina chinensis*, L.; DC. Prod. v. 618.

Herba pedalis, crispe pubescens. *Folia* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, $\frac{1}{4}$–$\frac{1}{2}$ poll. lata; petiolus $\frac{1}{3}$–$\frac{1}{2}$ poll. longus. *Capitula* $\frac{1}{2}$–$\frac{2}{3}$ poll. lata.

Hab. Madi, Dec. 1862, in flower (*Poloa*? no. 1, App. Speke's Journ. 638), *Col. Grant!* Also in South China.

[Common at 3° N. lat., in December, on sandy soil near water. Erect; 1 foot high. Flowers yellow. —J. A. G.]

Plate LXIV. B. fig. 1. Ray-floret; fig. 2. Disk-floret; fig. 3. Stamens; fig. 4. Achene; fig. 5. Scale of pappus.

34. Ambrosia maritima, L.; DC. Prod. v. 525; App. Speke's Journ. 638.

Hab. Banks of the Nile, about 16° N. lat., Apr. 1863, *Col. Grant!* Common in North Africa, Mediterranean countries, and the Levant.

[A bushy plant, covering the sloping clay banks of the Nile at lat. 16° N. Not in flower now (in April). —J. A. G.]

35. Eclipta alba, Hassk.; Benth. Fl. Austr. iii. 536.—*E. erecta*, L., and *E. prostrata*, L.; DC. Prod. v. 490. *E. erecta*, App. Speke's Journ. 638.

Hab. 7° 30′ S. lat., *Col. Grant!* A common tropical weed.

[Weed, 1 to 2 feet high, with white flowers, growing at $7\frac{1}{2}$° S. lat., in October.—J. A. G.]

36. Wedelia mossambicensis, Oliv., sp. nov. Herba erecta, hirsuta, e basi lignosa; caule gracili, striato, pilis setiformibus basi dilatatis subpatentibus parce hirsuto; foliis ovato-lanceolatis, acuminatis, denticulatis, subappresse hirsutis, triplinerviis, subsessilibus, basi rotundatis cuneatisve; capitulis terminalibus pedunculatis; involucri bracteis exterioribus foliaceis, ovatis v. ovato-lanceolatis, strigosis; ligulis oblongo-ellipticis, involucrum superantibus; pappo brevi, cupuliformi, laciniato, cum aristis 2 oppositis corollæ basin tubuliformem subæquantibus; acheniis appresse hirsutis.—? *Menotriche strigosa*, Steetz, in Peters, Mossamb. Bot. 475.

Caulis 1–1½-ped., crassitie pennæ corvinæ. *Folia* 3 poll. longa, 1¼ poll. lata. *Capitula* 1–1½ poll. lata.

Hab. 6° S. lat., alt. 3800 feet (*Wedelia* no. 1, App. Speke's Journ. 638), *Col. Grant!*

I cannot certainly identify the above with the Zambesi plant described by Steetz, which is said to have stem, peduncles, &c. with appressed rigid hairs. In our plant the hairs are subpatent. In any case *Menotriche* will have to be merged in *Wedelia*; and the specific name *strigosa* is preoccupied under *Wedelia*.

[Erect-growing, woody-rooted plant, 1 foot high, common by roadsides at 6° S. lat., alt. 3800 feet. —J. A. G.]

37. Aspilia Kotschyi, Benth. Gen. Plant. ii. 372.—*Coronocarpus Kotschyi*, Benth. Fl. Nigr. 433. *Dipterotheca Kotschyi*, Schultz Bip. in hb.; Kotsch. Nub. no. 103. *Wirtgenia Kotschyi*, Hochst. ni hb.; Schimp. Abyss., and Steetz, in Peters, Mossamb. Bot. 490. *Wedelia* no. 2, App. Speke's Journ. 638.

Hab. Uganda, in flower, July 1862, *Col. Grant!* Also in Kordofan, Abyssinia, and Mozambique, and perhaps also in Nigritania.

[One to two feet high, with tough erect purple stem, covered with rough hair. Grows in plantain-orchards on the equator. Flowers deep purple, July.—J. A. G.]

38. Ximenesia encelioides, Cav.; DC. Prod. v. 627; App. Speke's Journ. 638.

Hab. Khartoum, Apr. 1863, *Col. Grant!*

A weed of American origin, spread into the Old-World tropics. *Ximenesia* is now sunk by Mr. Bentham in *Verbesina* (Gen. Plant. ii. 380).

[Found flowering in April at Khartoum in 15½° N. lat., near cultivation. Flowers yellow.—J. A. G.]

39. Spilanthes africana, DC. Prod. v. 623; App. Speke's Journ. 638.

Hab. Roheho, 6° 38′ S. lat., alt. 4700 feet, Dec. 1860, and Unyoro, Oct. 1862, *Col. Grant!* Occurs also south of the tropic.

[A creeping plant with a red stem, from which roots grow, and small yellow flowers. Flowers on the Roheho Pass in December.—J. A. G.]

40. Coreopsis Grantii, Oliv., sp. nov. Herba annua, 2–4-pedalis; caule erecto, superne ramoso, laxe piloso-pubescente; foliis subsessilibus, deltoideis, bipinnatifidis, lobulis ovatis, obtusiusculis, mucronatis, supra scabrido-puberulis, subtus piloso-pubescentibus; capitulis pedunculatis, involucri hirto-pilosi bracteis exterioribus linearibus apiculatis, subæquilongis, alabastro recurvis patentibusve, interioribus latioribus disco æquilongis, ligulis oblongo-ellipticis involucro 3–4-plo longioribus; receptaculo plano; paleis linearibus canaliculatis, apice coloratis, achenio longioribus; acheniis compressis, margine et facie interiore parce setulosis; pappo minuto, cupuliformi, setoso-ciliato cum setis duabus oppositis, achenio 5–6-plo brevioribus, ex angulis ortis.

Folia 1½–2 poll. longa, basi 1–1½ poll. lata, lobulis integris v. paucidentatis, obtusis, mucronulatis. *Pedunculi* ad 1–1½ poll. longi, hirsuti. *Involucrum* bracteis ¼–⅓ poll. longis.

Hab. Karagué, in flower March 1862 (*Verbesina* no. 2, App. Speke's Journ. 638). Another plant from Karagué (*Verbesina* no. 3, App. *l. c.*) may belong to the same species. The leaf-segments are rather narrower.

[Grows 3 to 4 feet high, at an altitude of 4000 to 5000 feet (Karagué), with yellow flowers. Lower part of the stem is purple; so also are certain parts of the flowers. This somewhat bushy plant covers fallow ground, and sometimes was seen to take root from its stem.—J. A. G.]

Plate LXV. fig. 1. Ray-floret; fig. 2. Disk-floret and palea; fig. 3. Stamens; fig. 4. Style-branches; fig. 5. Young achene and palea.

41. Coreopsis (sp. nov. ?). Gani, Dec. 1862, *Col. Grant!*

This plant is rather too far advanced for description. It has much of the general aspect of *C. setigera*, Schultz Bip. (*Verbesina lineata*, A. Rich. Fl. Abyss. i. 410); but I do not find the outer uniseriate herbaceous involucral bracts so conspicuous as in that species, and the paleæ are shorter. The remaining achenes are crowned by a minute cupuliform callus, no trace of setæ being left.

[A straggling plant, 2 or more feet high, found at the bases of outcropping granite rocks, Gani; flower and fruit December.—J. A. G.]

42. Bidens pilosa, L.; DC. Prod. v. 597.—*B. leucantha*, Willd.; App. Speke's Journ. 638.

Hab. Karagué, Dec. 1861, *Col. Grant!* A common tropical weed.

[Erect plant, common in and near corn-fields; flowers (December) yellow and also white. The seed-vessels attach themselves to every thing they get into contact with.—J. A. G.]

43. Bidens lineariloba, Oliv., sp. nov. Herba erecta; caule glabro, valide costato; foliis breviter petiolatis v. subsessilibus, bipinnatipartitis, lobis angustissimis, glabris, basi vaginante ciliata; capitulis pedunculatis; involucri bracteis exterioribus circ. 12, biserialibus, herbaceis, lanceolatis, longe acuminatis, basin versus ciliatis, disco subæquilongis; paleis lineari-lanceolatis, acuminatis, longitudinaliter brunneo-striatis, interioribus late ellipticis v. obovatis v. truncatis, apice longe lineari-productis; ligulis ellipticis, involucro 3-plo longioribus, longitudinaliter striatis; ovariis compressis, glabris; pappo biaristato, aristis retrorsum setosis.

Caulis 1½–2½-pedalis. *Folia* 3–6 poll. longa, parce bipinnatipartita, rachi lobisque ½–1 lin. latis. *Pedunculi* graciles, ad 3–4 poll. longi. *Capitula* 2 poll. lata. *Achenia* matura . . . .

Hab. 4° 18′ S. lat., in flower, Apr. 1861 (*Verbesina* no. 1, App. Speke's Journ. 638), *Col. Grant!*

[Height 18 inches to 2 feet. Found in flower, yellow, at 4° 18′ S. lat., by corn-fields, in April. —J. A. G.]

Plate LX. fig. 1. Ray-floret and subtending scale; fig. 2. Disk-floret and palea; fig. 3. Stamens; fig. 4. Style-branches.

44. Chrysanthellum indicum, DC. Prod. v. 631; App. Speke's Journ. 638.—*C. senegalense*, DC. *l. c.* *Hinterhubera Kotschyi*, Schultz Bip. in hb. Kotsch. Nub.

Hab. Unyoro, Aug. 1862, *Col. Grant!* Widely spread in the Old-World tropics.

C. procumbens, Rich., is nearly allied. It differs in the less degree of lobing in the lower and radical leaves.

[By cultivation at 2° N. lat., August 1862.—J. A. G.]

45. Cotula abyssinica, Schultz Bip.; A. Rich. Fl. Abyss. i. 419.

Hab. By the Nile, March 1863, *Col. Grant!* Also in Abyssinia &c.

[By a well on the Nile at 15° N. lat.—J. A. G.]

46. Emilia sagittata, DC. Prod. vi. 302.

Hab. Zanzibar and Zungomero, 1860, *Col. Grant!* Also in Zambesia and India.

[Common weed, with orange flowers and the under part of the leaves red-cabbage colour. Zanzibar and other localities.—J. A. G.]

47. EMILIA CÆSPITOSA, Oliv., sp. nov. Caulibus numerosis, adscendentibus, sæpius 1–2-ramosis, basin versus obsolete pubescentibus, superne teretibus glabris, glaucescentibus; foliis lineari- v. oblongo-lanceolatis, caulinis 1–2 amplexicaulibus, integris, glabris, glaucescentibus; pedunculis erectis, gracilibus; capitulis mediocribus, aurantiacis, homogamis; involucri bracteis 10–14, uniserialibus, æquilongis, lineari-lanceolatis, acutis, extus pilosulis, disco brevioribus, margini receptaculi subturbinati glabri insertis; acheniis angustis, subæqualiter 5-angulatis, glabris v. obsolete setulosis; pappo albo, scabrido, deciduo.

Caules cæspitosi, ¾–1 ped. alti. *Folia* inferiora 2–3-poll. longa. *Capitula* ½ poll. lata; floribus hermaphroditis v. nonnullis sterilibus. *Antheræ* basi obtusæ. *Styli* rami lineares, apice in appendicem longiusculam producti.

Hab. Karagué, Feb. 1862 (*Emilia* no. 3, App. Speke's Journ. 638), *Col. Grant!*

[9 inches high, a bushy plant with a fibrous root and round smooth slender stems, found in cultivated ground. Flowers orange. Karagué, March.—J. A. G.]

48. SENECIO DISCIFOLIUS, Oliv., sp. nov. Annua; caule erecto v. adscendente parce ramoso, pilosulo; foliis orbicularibus, apice depressis v. retusis, repando-dentatis, in petiolum alatum longiusculum repente angustatis, glabris v. nervo medio parce pilosulis; pedunculis longis, gracilibus, glabris, monocephalis, apice turbinatim dilatatis; capitulis mediocribus, radiatis, ecalyculatis; involucri bracteis uniseriatis, æquilongis, oblongis, apice triangulari-acutatis, glabris; ligulis flavis, recurvis patentibusve, involucro brevioribus; ovariis pilosulis; pappo albo, tenuissimo; acheniis . . . .

Herba 1–2-pedalis. *Folia* cum basi contracta petioliformi ad 3 poll. longa, lamina ad 2 poll. lata. *Pedunculi* 3–4 poll. longi. *Capitula* ½ poll. lata.

Hab. Uganda, July 1862 (*Emilia* no. 1, App. Speke's Journ. 638), *Col. Grant!*

I think, nearly allied to *S. bellidifolius*, A. Rich., Fl. Abyss. i. 439; differing in its long peduncles and much larger heads.

[Grows at 1° N. lat., in the plantain-groves. Flowers (July) orange-coloured; stems often found leafless.—J. A. G.]

49. SENECIO, sp.

An annual glabrous herb, with the lower leaves wanting. The specimens, so far as they go, agree nearly with *S. abyssinicus*, Schultz Bip.; A. Rich. Fl. Abyss. i. 438.

Hab. Unyoro, Nov. 1862 (*Senecio* no. 1, App. Speke's Journ. 638), *Col. Grant!*

[Weed in the fields of Unyoro, November.—J. A. G.]

50. GAZANIA, sp.?

A single small seedling specimen, with slender leafy stem ½ foot long, terminating in a single radiate capitulum. I should not be justified in describing the species from such imperfect material.

Hab. 5° 5′ S. lat., alt. 3900 feet (*Cullumia* no. 1, App. Speke's Journ. 638), *Col. Grant!*

[Diminutive plant at 5° 5′ S. lat., alt. 3900 feet. J. A. G.]

51. BERKHEYA SPEKEANA, Oliv., sp. nov. Erecta, ramosa; caule subtereti, puberulo, deinde glabrato; foliis lineari-oblongis lanceolatisve, acutiusculis, remote spinoso-dentatis, sessilibus, semiamplexicaulibus, haud decurrentibus, supra appresse setosis, subtus tomento albo denso canis; capitulis majusculis, ramulos terminantibus; involucri bracteis numerosis, laxis, linearibus v. lineari-lanceolatis, acuminatis, spinosis, floribus radii brevioribus; receptaculo profunde alveolato, alveolis irregulariter fimbrilliferis; antheris basi acute sagittatis; pappi squamulis circiter 15–20, ovario æquilongis, oblanceolatis, erectis.

Herba erecta, verisimiliter 2–4-pedalis, foliosa; caule longitudinaliter striato, ultimis pubescenti-puberulis. *Folia* 4–6 poll. longa, ½–¾ poll. lata. *Capitula* 3 poll. lata; involucri bracteæ nervosæ, spinosæ, subtus cano-tomentosæ. *Corollæ* pilosulæ; ligulæ subtus valide nervosæ.

Hab. Unyoro, August, and Madi, December 1862 (*Cullumia* no. 2, App. Speke's Journ. 638), *Col. Grant!*

[A very handsome plant, with yellow flowers. Found in the forest and near cultivation at 2°–3° N. lat., in August and December.—J. A. G.]

Plate LXVI. fig. 1. Ray-floret; fig. 2. Style of the same; fig. 3. Disk-floret; fig. 4. Stamens; fig. 5. Style; fig. 6. Achene; fig. 7. Scale of pappus.

52. Echinops longifolius, A. Rich. Fl. Abyss. i. 452, tab. 61.—*Echinops* no. 2, App. Speke's Journ. 638.

Hab. Madi, Dec. 1862, *Col. Grant!* Also in Abyssinia and elsewhere in the Upper Nile region.

[Thistle, with elegant leaves and branches, round blue flower, root firmly set in the soil. Found in open ground at Madi, 3° N. lat., in December.—J. A. G.]

53. Echinops amplexicaulis, Oliv., sp. nov. Caule erecto, folioso, sulcato, arachnoideo-tomentoso; foliis ovatis v. ovato-ellipticis, acutis, spinoso-lobatis, supra tenuiter arachnoideis deinde glabratis, subtus cano-tomentosis, reticulatis, sessilibus, amplexicaulibus, glomerulo (homomorpho ?) breviter pedunculato terminali; receptaculo communi setoso, tandem glabrato; involucri bracteis 20–25, coriaceis, subnitentibus, glabris, margine superne dense spinulosis, extimis brevioribus lineari-spathulatis, intermediis lineari-ovalibus lanceolatisve longe acuminatis, 5 intimis fere ad medium connatis; antherarum caudis linearibus complanatis, obtusis, barbellatis; ovario dense piloso; pappi setis ∞ brevibus linearibus barbellatis, basi in cupulam brevem connatis.

Herba erecta, 4 ped. alta. *Folia* superiora conferta, 3–4 poll. longa, 1½–2½ poll. lata. *Pedunculus* terminalis, pollicem longus v. brevior. *Involucrum* commune bracteis paucis brevibus arcte deflexis, oblanceolatis, glabris, apicem versus spinuloso-dentatis, ⅓ poll. longis. *Capitula* involucro 1–1¼ poll. longo, bracteis sæpius leviter falcato-curvatis, rigidiusculis, margine setuloso-dentatis, setulis brevibus adscendentibus. *Corolla* glabra, profunde 5-partita. *Ovarium* subturbinatum, dense pilosum.

Hab. Usui, alt. 4200 feet (*Echinops* no. 1, App. Speke's Journ. 638), Nov. 1861, *Col. Grant!*

[Erect, 4 feet high, with prickly leaves, white underneath, and a very handsome head. Flowers pink. Found amongst bushes, in a rocky country, altitude 4200 feet, Usui, November, and at Ukidi in the November of the following year.—J. A. G.]

Plate LXVII. fig. 1. Receptacle, with setæ and common involucre; fig. 2. Involucre and floret; fig. 3. Scale of Involucre; fig. 4. Stamens; fig. 5. Style; fig. 6. Ovary and pappus.

54. Centaurea Calcitrapa, L.; DC. Prod. vi. 597.

Hab. By the Nile, about 26° N. lat., *Col. Grant!* A widespread weed in South Europe and the East.

[Plentiful on the desert-ground near Thebes and Carnac, at 26° N. lat. I saw a camel carrying a load of it, probably as fodder. This thistle (pink flower) is delicately scented. Flowers in May.—J. A. G.]

55. Carthamus tinctorius, L.; DC. Prod. vi. 612.

Hab. Cultivated at Khartoum, Feb. 1863, *Col. Grant!*

[2 to 3 feet high; flowers in February; cultivated for its oil at 15° N. lat., and further to the north, in Egypt. The native name is "gartoom;" the modern town of Khartoom, at the junction of the Blue and White Niles, is probably called after this plant, where it grows.—J. A. G.]

56. PHYLLACTINIA GRANTII, Benth. in hb. Kew. Herba annua, ramosa, tomentosa; foliis oblanceolatis oblongisve, acutiusculis, minute serrulatis, supra scabris, subtus laxe tomentosis, basi in petiolum angustatis: capitulis terminalibus breviter pedunculatis; involucri bracteis exterioribus foliaceis, interioribus subulato-attenuatis, rigidulis, arachnoideis, recurvis patentibusve.

Herba dura, diffuse ramosa, ¾ ped. alta; ramis arachnoideo-tomentosis. *Folia* alterna, 1½–2 poll. longa, juniora tomento ochraceo v. flavido colorata. *Pedunculi* pollicares, striati, tomentosi. *Involucrum* bracteis exterioribus foliaceis, folia caulina simulantibus, capitula longe superantibus, interioribus pluriseriatis, angustis, longe et rigide acuminatis, recurvis, arachnoideis. *Flores radii* ligulati, ut videtur purpurei, neutri; achenia ampulliformia, teretia, rostrata, glabra; pappus pauciseriatus squamis linearibus acutis obtusisve. *Flores disci* breves; corolla tubo brevissimo, limbo dilatato, campanulato, 5-partito, lobis lineari-lanceolatis, revolutis. *Antheræ* basi acutissime et longe caudatæ, caudis retrorsum papilloso-pilosis. *Achænia* basi pilis (exsicc.) compressis, apice truncatis, bicuspidatis, basi graciliter attenuatis, unicellularibus stuposa, valide 10-costata, costis glabris, canaliculis intercostalibus pilosis; pappus pluriserialis squamis brunneis, margine albido-scarioso scabrido, interioribus lanceolatis, acutis, coriaceis.

Hab. Mininga, April 1861 (*Cullumia* no. 3, App. Speke's Journ. 638), *Col. Grant!*

[A pretty bushy plant, 6 to 8 inches in height, found in flower near corn-fields, Mininga, 4° 18′ S. lat., in March.—J. A. G.]

Plate LXVIII. fig. 1. Portion of receptacle; fig. 2. Ray-floret; fig. 3. Disk-floret; fig. 4. Stamens of the same; fig. 5. Style and stigma; fig. 6. Scales of pappus.

57. ERYTHROCEPHALUM NUTANS, Benth. MSS. in hb. Kew. Herba e rhizomate (?) erecta; caule costato, arachnoideo-tomentoso; foliis ellipticis v. obovato-ellipticis, obtusis v. superioribus acutis, inæqualiter serrato-dentatis, supra glabratis, subtus cano-tomentosis, basi in petiolum brevem angustatis; capitulis magnis, terminalibus, solitariis, longe pedunculatis, nutantibus; pedunculis striatis, tomento pilis multicellulosis coloratis intermixto indutis; involucri bracteis pauciseriatis, laxis, exterioribus ovato-lanceolatis, acuminatis, margine plus minus fimbriatis, dorso tomentosis, interioribus angustioribus; floribus radii ligulatis, involucro 2–3-plo longioribus; paleis latiuscule linearibus, apice fimbriatis; acheniis majusculis, ellipsoideis, 5-angulatis, scabridis, glabratis v. parce pilosulis.

Caulis ½-ped. *Folia* caulina alterna, inferiora obtusa, brevissime petiolata, 2–4½ poll. longa, superiora 6 poll. longa, petiolo alato, ½ poll. longo. *Pedunculus* 6 poll. longus. *Capitulum* 2–2½ poll. diam. *Corolla* glabra, disci limbo lineari-partito, radii bilabiata, labio interiore breve 2-partito. *Antheræ* basi caudatæ, caudis longiusculis, complanatis, barbellatis, per paria connatis. *Pappi* setæ caducæ, elongatæ, angustissime lineares, margine scabræ.

Hab. 5° S. lat., 33° E. long., alt. 3800 feet (*Arctotis* ?? no. 1, App. Speke's Journ. 638), *Col. Grant!*

[Found in the open forest, where the soil is light. Flower brightest scarlet, drooping.—J. A. G.]

Plate LXIX. fig. 1. Ray-floret and palea; fig. 2. Disk-floret and palea; fig. 3. Seta of pappus; fig. 4. Stamens; fig. 5. Style-branches; fig. 6. Achene.

58. ERYTHROCEPHALUM LONGIFOLIUM, Benth. MSS. in hb. Kew. *E. nutanti* arcte affine, differt: foliis oblanceolato-ellipticis, obtuse dentatis; capitulo erecto.

Caulis 1 ped. altus, costato-angulatus. *Folia* 4–8 poll. longa, 1½–2½ poll. lata, basin versus gradatim angustata.

Hab. East Equatorial Africa, common (*Arctotis* ?? no. 2, App. Speke's Journ. 638), *Col. Grant!*

[Erect, with a tuberous root. Flowers deep scarlet.—J. A. G.]

59. Erythrocephalum minus, Oliv., sp. nov. Herba parva, arachnoidea; foliis oblongo-v. lineari-oblanceolatis, apice mucronatis apiculatisve, obsolete v. crenato-dentatis, sessilibus, amplexicaulibus, utrinque plus minus arachnoideo-tomentosis; capitulis breviter pedunculatis; involucri arachnoidei bracteis ovato-lanceolatis, acuminatis, margine superne rigidiuscule setulosis fimbriatisve, disco paulo brevioribus.

Radix tuberosa, fusiformis, 8 poll. longa, ambitu 10 poll. (*fide sched. Grant.*). *Caulis* 3–4 poll., cum foliis et involucro arachnoideo-tomentosus. *Folia* 2–2½ poll. longa, ½ poll. lata. *Pedunculus* ½–1 poll. longus. *Capitulum* 1 poll. diam. *Paleæ* latiuscule lineares, apice dentato-fimbriatæ. *Corolla* glabra, pappo longior. *Pappus* caducissimus, setis paucis, elongatis, attenuatis, barbellatis. *Ovarium* pubescens.

Hab. 6° 55′ S. lat. In flower Oct. 1860 (*Composita dubia*, App. Speke's Journ. 638), *Col. Grant!*

[Root carrot-shape; flowers yellow. From 6° 55′ S. lat., October.—J. A. G.]

60. Dicoma karaguensis, Oliv., sp. nov. Herba lignosa, pedalis, ramosa; caule incano-puberulo lineis elevatis angulato; foliis subcoriaceis, anguste lineari-ovalibus, acutis, minute serrulatis, supra glabratis, subtus tomentosis, subsessilibus; capitulis terminalibus, solitariis, foliis paucis patentibus circumdatis; involucri bracteis multiseriatis, laxiusculis, rigidis, anguste lineari-subulatis, lineis duabus intramarginalibus coloratis notatis, discum superantibus; receptaculo foveolato, glabro; acheniis dense setoso-pilosis; pappi setis pluriseriatis, corollam subæquantibus, albis, barbellatis.

Caulis ramosus, ramis divaricatis, ½–1 ped. altus. *Folia* 1–1½ poll. longa, ⅙–⅓ poll. lata. *Capitula* campanulata, 1 poll. lata; involucro glabrato v. primum sparse arachnoideo; bracteis margine scabridis.

Hab. Karagué, 1862 (*Dicoma*, sp. n., App. Speke's Journ. 638), *Col. Grant!*

[6 to 10 inches high. Stem dry, grey, woody; flowers white, tending to pale pink. Karagué, alt. 4000 feet.—J. A. G.]

Plate LXX. fig. 1. Involucral bract; fig. 2. Floret; fig. 3. Stamens; fig. 4. Style; fig. 5. Achene (immature) and seta of pappus.

61. Gerbera, sp., *an G. piloselloides*, Cass.?; DC. Prod. vii. 16; App. Speke's Journ. 638.—*G. Schimperi*, Schultz Bip.; A. Rich. Fl. Abyss. i. 458.

Hab. Usagara hills, 6° 51′ S. lat., *Col. Grant!*

I cannot finally determine the species; the florets and achenes are all fallen in our specimens.

[From the Usagara hills, altitude 3000 feet, 6° 51′ S. lat., Nov. 1860.—J. A. G.]

62. Sonchus oleraceus, L.; App. Speke's Journ. 638.

Hab. Karagué (no. 457) and Unyoro, 1862.

[Stem five-angled, hollow, milky, slightly purpled, with a few straight yellow hairs, large at their tips; root-leaves large; flowers yellow. Karagué and Uganda, March and August.—J. A. G.]

Var. acheniis rugulosis (no. 407), Karagué, 1862, *Col. Grant!*

[Stem round and bare, the auricles of the leaves with hooked teeth; flowers yellow. By water, 1° 42′ S. lat., February and April.—J. A. G.]

63. MICRORHYNCHUS, sp.? (*Lactuca*, sp., App. Speke's Journ. 638).

A glabrous glaucescent herb, too young to describe, with narrow, linear-lobed, pinnatipartite leaves and lax paniculate inflorescence.

[This is a common, milky plant, from 7½° S. lat.; collected October 1860. The natives eat the leaves as a vegetable.—J. A. G.]

THE

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Hab. Karagué (no. 457) and Unyoro, 1862.

[Stem five-angled, hollow, milky, slightly purpled, with a few straight yellow hairs, large at their tips; root-leaves large; flowers yellow. Karagué and Uganda, March and August.—J. A. G.]

Var. acheniis rugulosis (no. 407), Karagué, 1862, *Col. Grant!*

[Stem round and bare; the auricles of the leaves with hooked teeth; flowers yellow. By water, 1° 42′ S. lat., February and April.—J. A. G.]

63. MICRORHYNCHUS, sp.? (*Lactuca*, sp., App. Speke's Journ. 638).

A glabrous glaucescent herb, too young to describe, with narrow linear-lobed pinnatipartite leaves and lax paniculate inflorescence.

[This is a common, milky plant, from 7½° S. lat.; collected October 1860. The natives eat the leaves as a vegetable.—J. A. G.]

SAPOTACEÆ.

1. CHRYSOPHYLLUM, sp.; App. Speke's Journ. 639, where it is referred to as allied to *C. magalis montanum*, Sond. It appears to be specifically distinct, differing in longer, more slender pedicels, and minuter indumentum on the underside of the leaves; but the flowers of Col. Grant's specimen are too young for analysis and description.

Hab. Madi woods, Dec. 1862, *Col. Grant!*

[A fig-like, milky tree on the face of the hill at Madi, where it grew like a huge bush. Leaves 5 by 2 inches, silvery white beneath, and most numerous at the branch-tips. Flowers (December) brown, in close clusters in the leaf-axils at the extreme ends of the branches. Ribs of the leaves ⅕ of an inch apart and very prominent underneath. The natives say that the fruit is of the size of a pea. Met with frequently, but could not find any name or use made of it, except that ropes are made from the inner bark.—J. A. G.]

2. CHRYSOPHYLLUM? sp. (seed only); App. Speke's Journ. 639.

["Chenjha." A lofty tree 10 feet in girth; the fruit in size, colour, and skin like a greengage-plum, with one to three flat stones. A sweet drink is made from the pulp, which, though sweet, is dry and insipid. Ripens in August. The wood is used for spear-handles. 5° S. to 3° 15′ N. lat., near water (No. 93).—J. A. G.]

3. MIMUSOPS KUMMEL, Hochst.; DC. Prodr. viii. 203; App. Speke's Journ. 639.

Hab. Madi, Dec. 1862, *Col. Grant!* Found also in Abyssinia.

[A lofty tree, 5 feet in circumference of trunk, growing in the rocky bed of the stream at Madi, December 12. Foliage rich and beautiful; leaves soft, deep green and shining above, the ribs not sensible to the touch. The calyx upon the fruit has four outer and four inner sepals, large and small. Fruit a drupe 1⅛ inch long, orange-yellow, sometimes red, ovate, pointed, with a shining surface, sweet-tasted, like a date; one stone with three unequal angles of a shiny brown colour; the kernel unpleasant to the taste, and of the colour of our yellow wax-candles.

Name and use.—"M'nyemvee" (Kin.). Birds are very fond of the fruit.—J. A. G.]

4. BASSIA PARKII, G. Don; DC. Prod. viii. 199. Arbor; foliis obovato- v. oblanceolato-oblongis, obtusiusculis, apice integris emarginatisve, glabrescentibus; floribus ferrugineo-piloso-tomentosis; calyce 8-partito, lobis biseriatis; corollæ 16–20-fidæ lobis biseriatis, exterioribus late ovatis v. ellipticis, interioribus brevioribus obovatis, dentatis v. apicem versus laciniatis, longiuscule apiculatis; staminibus 8–10, glabris; antheris mucronatis; fructu monospermo.

Arbor, succo lacteo copioso, cortice rugoso. *Folia* apice ramorum conferta, 5–9-poll. longa, 2–3½ poll. lata, margine subcrispato-undulata, basi sæpius obtusa v. rotundata, nervis lateralibus rectiusculis subparallelis, subtus prominentibus, vernatione pilosula v. tomentella deinde glabra; petiolus 2–2½ poll. longus, glabrescens. *Flores* umbellatim fasciculati, ½–⅔ poll. lati; pedicelli ⅓–1 poll. longi, tomentosi. *Calyx* 8-partitus, lobis biseriatis æquilongis, lobis 4 exterioribus ovato-oblongis, 4 interioribus ovalibus. *Corolla* calycem paulo superans. *Stamina* 8-10, lobis interioribus corollæ alterna, glabra; anthera linearis infra medium affixa, apice mucronata. *Ovarium* dense hirsutum, 8–10-loculare. *Fructus* ellipsoideus

obovoideusve, $1\frac{1}{2}$–2 poll. longus, pericarpio tenui. *Seminis* testa crustacea, nitida, castaneo-brunnea.—*Butyrospermum niloticum*, Kotschy, Pl. Knobl. tab. 1, et *B. Parkii*, tab. 2; *B. Parkii*, Kotschy, Pl. Tinnneanæ, tab. 8. fig. B.

Hab. Madi, plentiful, Dec. 1862, *Col. Grant!* Widely spread in north tropical Africa.

[A tree, 10 to 15 feet in width; trunk 10 feet high; the wood red, the colour of cedar, but hard and close in the grain, so much so that the natives think it unfit to be cut by their hatchets. Plentiful at $3\frac{1}{2}$° N. lat., but not observed anywhere else. Bark very thick, and deeply marked by oblong segments, 3 by 2 inches: on cutting it, a milk exudes profusely, becoming a hard, white, translucent, insoluble gum (collected). The branches have a bare appearance, as the leaves chiefly grow from the tips of the branches. The leaves are very handsome, with waving edges and close parallel ribs. Inflorescence in thick clusters from the ends of the branches, smelling heavily of honey, and covered in December with the honey-bee. Flowers creamy yellow, fall off readily and cover the ground.

Name and use.—"Meepampa" (Kin.). It was known to "Manua," who had seen it at Loowemba, 9° S. lat., and nowhere else. When this tree is growing by the villages, the bark is much chipped away. I infer from this that its juice is used.

The fruit was seen, though not identified. In my notes made in December, when the tree was in blossom, there is a figure of a fragment of an unknown fruit and the following remark:—"652. Madi country, 3rd Dec. 1862. On pathway, found half the shell of a horse-chestnut (?), same colour, polish, and size, said to be eaten." I am now able to identify this note with the seed of *Bassia Parkii* by reading Schweinfurth, who describes it as resembling the horse-chestnut, and by examining the specimens in the Kew Museum of the seed and Shea-butter eaten by the natives.—J. A. G.]

Plate LXXIII. fig. 1. Flower; figs. 2 and 3. Corolla; fig. 4. Inner segment of corolla; fig. 5. Stamen; fig. 6. Pistil; fig. 7. Transverse section of ovary; fig. 8. Seed.

Myrsineæ.

1. Embelia nilotica, Oliv., sp. nov. Arbor; ramulis ultimis foliisque subtus ferrugineo-tomentosis; foliis breviter petiolatis, late ellipticis late et obtuse apiculatis; racemis axillaribus brevibus, calyce pedicellisque tomentosis, petalis æstivatione subvalvatis.

Arbor. Rami rectiusculi, teretes, lenticellati, hornotini ferrugineo-tomentosi. *Folia* tenuiter coriacea, elliptica v. obovata, integra, supra glabrata, subtus tomentosa v. pilosula, $3\frac{1}{2}$–$4\frac{1}{2}$ poll. longa, 2–3 poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{3}$ poll. longus. *Racemi* tomentosi, $\frac{3}{4}$–1 poll. longi; bracteolæ lanceolatæ v. subulatæ, pedicellis æquilongæ, deciduæ. *Calyx* parvus, profunde 5-fidus, tomentosus, lobis deltoideo-ovatis, acutis. *Petala* ovato-lanceolata, dorso glabrata, margine et intus tomentella, æstivatione valvata v. subvalvata. *Stamina* glabra. *Ovarium* glabrum, ovoideo-globosum; stylus longiusculus, sparse papillosus; stigma 3-lobatum.

Hab. Madi, Dec. 1862 (*Embelia*, sp., App. Speke's Journ. 639), *Col. Grant!*

[A tree, 30 inches in circumference of stem. Banks of a rocky burn in Madi, December. The mode of growth in this tree was remarkable: the older wood was bent down as if from the weight of the season's fruit; the shoots of the year grew erect for 10 feet, and were covered with small flowers and a red-brown pubescence, which also adheres to the backs of the leaves. Leaf-ribs prominent underneath and red. Calyx and corolla both white. The natives told me that its fruit resembled in size the shot we kill birds with, and called the tree "m'cæker'a" (Kin.).—J. A. G.]

Plate LXXI. fig. 1. Expanded flower; fig. 2. Same, with corolla removed; fig. 3. Stamen and petal; fig. 4. Ovary laid open; fig. 5. Placenta and ovules, transverse, and fig. 6 vertical section.

PLUMBAGINEÆ.

1. PLUMBAGO ZEYLANICA, L.; DC. Prod. ii. 692; App. Speke's Journ. 645.

Hab. Inenge, Usagara, 6° 30′ S. lat., *Col. Grant!* Widely spread in the Old-World tropics.

[This is the only plant I could find in flower at our camp of Inenge in December before crossing the east-coast range for the interior. There were no leaves on the stem, which is very sticky. Flowers diminutive and white. It grows amongst rocks where there is no water, and at an altitude of 4000 feet at 6½° S. lat.—J. A. G.]

OLEINEÆ.

1. LINOCIERA NILOTICA, Oliv., sp. nov. Arbor excelsa, glabra; ramulis teretibus albescentibus; foliis ovali-oblongis, obtusis v. obtusiusculis; paniculis brevibus axillaribus v. ad nodos vetustos defoliatos; petalis lineari-lanceolatis, glabris.

Folia glabra, 3–5 poll. longa, 1–1½ poll. lata, apice sæpe angustata, obtusiuscula, basi cuneata; petiolus canaliculatus, ⅓–½ poll. longus. *Inflorescentia* in ramulis annotinis paniculata v. racemosa, 1–2 poll. longa, glabra v. cum bracteis parvis lanceolatis pubescens; ramuli laterales, ⅛–½ poll. longi; pedicelli brevissimi. *Flores* ¼–⅓ poll. longi. *Calyx* lobis ovatis. *Petala* per paria mediantibus staminibus cohærentes.

Hab. Madi, Dec. 1862 (*Chionanthus*? sp., App. Speke's Journ. 639), *Col. Grant!* We have probably the same species from Mr. Petherick.

[A lofty tree, with 6 to 8 feet girth of stem; in low ground, below the rocks at Madi, December 17. Leaves like those of our peach-tree, but smooth; the side and mid ribs pressed in from above; the side ribs rather distant, and nearly at right angles to the midrib. Flowers sweetly scented; corolla white, deciduous, twice the length of calyx. Stamens two, very large, inserted in the corolla-throat. Fruit the size of large peas, in clusters, of several colours, black with red and white, like the fruit of *Syzygium guineense*, DC.

Name and use.—"Meesoo" (Kin.).—J. A. G.]

Plate CXVII. fig. 1. Flower; fig. 2. Pair of petals with connecting stamen; fig. 3. Anthers; fig. 4. Pistil.

SALVADORACEÆ.

1. SALVADORA PERSICA, L.; Phil. Trans. Abridg. ix. 635 (adnot.).

Hab. By the Nile, lat. 7° N., March 1863 (App. Speke's Journ. 645), *Col. Grant!*

Folia ovata v. ovato-lanceolata, obtusa. *Paniculæ* axillares et terminales; ramulis divaricatis, pedicellis brevissimis subnullisve. *Corollæ* lobis calycem duplo excedentibus, arcte reflexis, late ovato-oblongis; tubo inappendiculato. *Antheræ* exsertæ.

The African plant, which is widely spread through the continent north of the equator, differs from the Indian (Peninsular) form (*S. Wightiana*, Pl.) in having the flowers very nearly sessile. In this respect, however, it accords with the original plant of Dr. Garcin's from the Persian Gulf, upon which Linnæus based the species.

[A large bush with white bark; plentiful on the banks of the Nile in March, about 12° N. lat. and also further up the river. Now (March) in fruit, which is a small green berry. Our men knew the tree, and make tooth-scrubbers of its branches. The Turks called it "arak."—J. A. G.]

Apocyneæ.

1. Landolphia florida, Benth. in Hook. Fl. Nigr. 444.—Var. *leiantha*, floribus fere glabris. Pl. Tinneanæ, tab. 13. fig. A.

Hab. Madi, Dec. 1862 (App. Speke's Journ. 639).

The species, generally with the calyx and corolla-tube distinctly tomentose, is widely spread in Tropical Africa.

[A woody climber, named "m'hoongo" (Kis.), found at Madi (December) in a shady spot, by a rocky burn. Its trunk travelled like a boa constrictor along the ground till it found a tree to climb up, and was 25 inches in circumference; ascending to the topmost branches, it threw down pendants of foliage and clusters of lily-white scented flowers. The opposite leaves have surfaces like the soft green of our laurel; and their colourless midribs are sharp-angled underneath. The milk of this, if rubbed upon the skin, adheres like bird-lime, and can scarcely be rubbed off; while that of the "m'peera," another rubber, yields easily to water. The natives make this close distinction between the two, also that the leaves of the "m'peera" are smaller. The juice of this is certainly very milky, but neither so sticky nor stringy as I should have supposed from the above description of two rubbers. The fresh young shoots are jointed every 10 inches, 1 inch in circumference, deep green, spotted, and round like india-rubber tubing; they are brittle; and a cord of pith may be pulled out of them. From these joints grow the tendrils by which the plant supports itself.

Name and use.—The Wahiao people make playing-balls from the juice of this tree, and consider its rubber to be the most adhesive known. They know of another climber called the "ookombe" (Kis.), which is "brother to this;" they also mention the "m'peera;" but these are thought inferior.—J. A. G.]

2. Carissa edulis, V.; DC. Prod. viii. 334.—*C. Richardiana*, Jaub. et Sp. Ill. Pl. Or. v. t. 496. *Carissa* no. 1, App. Speke's Journ. 639.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[Size of an apple-tree, near Lake Windermere, Karagué (December). Bark a mouldy green. Leaves with a shining surface. Thorns an inch long, straight, opposite, pink-tipped; calyx pink-tipped; corolla entirely red before the flower opens; on expansion it remains pink and the petals are white. The clusters of red unopened flowers were so brilliant as to conceal a scarlet-breasted bird which had perched in the tree. Flowers richly scented.—J. A. G.]

3. Carissa, sp.—*Carissa* no. 2, App. Speke's Journ. 639.

Hab. Madi, 3° N. lat., Dec. 1862, *Col. Grant!*

Not improbably a distinct species; but we have not the necessary material for description. Frutex depressus, ramulis ultimis glaberrimis; foliis ovato-ellipticis v. -lanceolatis, glabris, nervo medio faciei superioris primum minutissime pilosulo.

[A dwarf shrub, growing low on the ground. The peel of the thick roots, made into a flour, mixed with oil, and rubbed upon the body, is used by the natives to induce perspiration in fever cases. The brother of the Sultan at Karagué thought himself a great doctor, and told me that this remedy seldom failed if the patient was careful to cover himself up on using it. The root, when green, smells disagreeably, not unlike a mashed pea-pod.

The shrub has the appearance of an orange-tree; but the flowers are jasmine-scented, and the branches angular at the nodes. Leaves evergreen, with a glossy surface, of the same colour on both sides. Thorns double, straight, green, 2 inches long, black-tipped; the older ones thicken at their bases very much, and are forked to a pink point. Root fibrous, smells disagreeably: peeled and eaten, it is tasteless;

but the Wezees consider it a cure for cough and chest-complaints. The fruit is said to be black, the size of a bullet; and the shrub is called "m'fombwah."—J. A. G.]

4. HOLARRHENA FEBRIFUGA, Klotzsch, in Peters, Mossamb. Bot. 277.—Var. *glabra*, App. Speke's Journ. 639.

Hab. M'bwiga, Nov. 1860, *Col. Grant!* Widely diffused in East Tropical Africa.

Probably *H. glabra*, Kl., of Zambesi-land may be the same.

[A common plant or bush at M'bwiga, at an altitude of 1300 to 1500 feet, with jasmine-scented flowers. —J. A. G.]

5. ADENIUM SPECIOSUM, Fenzl, Diag. Præv. Pempt. Stirp. Æthiop. 3 (extr. Wien. Sitzungsb. vol. li.).

Hab. Bari country, Feb. 1863 (*Adenium* no. 1, App. Speke's Journ. 639); also in Kordofan and Sennaar.

[A bush from Madi (February), 3 feet high; but the branches are oddly thick, being 20 inches round at the base and tapering to nothing at 3 feet. Stem smooth. Flowers scarlet, deciduous; the five stamina twist round each other like a thread. Called "m'goboll'a" (Kin.). No uses known.—J. A. G.]

6. ADENIUM no. 2, App. Speke's Journ. 639. A single specimen, differing from *A. speciosum*, Fenzl, in its glabrous leaves. But I find one specimen of it among Kotschy's, associated with others which agree with Dr. Fenzl's description based upon them. I must therefore for the present regard Col. Grant's plant as a form of *A. speciosum*, F.

Hab. 6° 55′ S. lat., *Col. Grant!*

[A solitary woody plant, 1 or 2 feet high. Flowers (October), of a rich pink colour, from the tips of the branches.—J. A. G.]

ASCLEPIADEÆ.

1. TACAZZEA APICULATA, Oliv., sp. nov. Frutex volubilis; ramis pubescentibus glabratisve; foliis late vel ovato-ellipticis, obtusis, sæpius breviter apiculatis, basi subcordatis v. truncatis, subtus breviter tomentellis; paniculis axillaribus laxis, ramulis patentibus flore glabro æquilongis v. eodem longioribus.

Folia $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, $1\frac{1}{4}$–$2\frac{1}{4}$ poll. lata; petiolus $\frac{1}{2}$–$\frac{3}{4}$ poll. longus, subtus pallidiora. *Inflorescentia* folium interdum superantia, glabra; bracteolæ squamiformes, ovatæ, deciduæ. *Flores* $\frac{1}{3}$–$\frac{1}{2}$ poll. diam., rubri. *Calyx* lobis late ovatis, obtusiusculis. *Corolla* laciniis oblongo-lanceolatis, obtusis, fauce filamentis filiformibus apice incurvatis laciniis alternantibus; squamulæ carnosulæ, truncatæ. *Stigma* turbinatum, dilatatum, breviter apiculatum.

Hab. Madi and Gondokoro, Dec. 1862, Feb. 1863 (*Tacazzea*, sp., App. Speke's Journ. 639), *Col. Grant!*

We have apparently the same species from the Zambesi (Dr. Kirk) and the Niger (Barter); the latter described as with pale yellow flowers. Barter's specimen, moreover, is in fruit, the follicles being very similar to those of *Tacazzea venosa*, Dcne., about $1\frac{3}{4}$ inch in length, tapering from the base, glabrous, obscurely striate when dry.

[Climber by Madi burn, and also at Gondokoro, covering the trees as a creeper; with a milky, round, twisting stem, covered closely with down. Leaves paler beneath. Calyx brick-red; corolla (February) minute, red, as well as the filaments. Large, red, wicked-looking ants cover this milky plant. It has no uses.—J. A. G.]

Plate LXXII. fig. 1. Flower; fig. 2. Same, corolla-lobes removed; fig. 3. Anther; fig. 4. Gynæcium.

2. Toxocarpus africanus, Oliv., sp. nov. Frutex volubilis, ramulis gracilibus glabris; foliis ovato- v. lanceolato- v. oblongo-ellipticis, acute acuminatis, basi plus minus rotundatis, glabris; paniculis brevibus axillaribus, ferrugineo-pubescentibus; bracteis minutis, ovatis; floribus glabris; corollæ lobis æstivatione sinistrorsum obtegentibus.

Folia 2 poll. longa, ¾–1 poll. lata; petiolus ⅙–¼ poll. longus. *Paniculæ* ½–1 poll. longæ.

The only specimen is not sufficiently advanced to enable me to describe the flowers, which agree, so far as we can determine in bud, with the structure of *Toxocarpus* as limited by Mr. Bentham in the 'Gen. Plantarum' (ined.). The doubtful "*Toxocarpus*?" of Dr. Ascherson, in Schweinfurth's 'Beitr. Fl. Æthiop.' 128, must be distinct from the above in its reticulate-venose leaves more or less pubescent beneath, and rounded or subcordate at the base. It is not improbably my *Tacazzea apiculata*.

Hab. Unyoro, July 1862 (*Asclepiadea? dubia*, App. Speke's Journ. 640), *Col. Grant!*

[Climber in full flower, in the thickets of Unyoro (July).—J. A. G.]

Plate CXVIII. A. fig. 1. Bud; fig. 2. Expanded flower; fig. 3. Corolla-lobe; fig. 4. Stamen.

3. Schizoglossum Grantii, Oliv., sp. nov. Caule simplicissimo, striato, hirsuto; foliis ovato-ellipticis, brevissime petiolatis, obtusis v. late apiculatis, utrinque scabride hirsutis; umbellis multifloris, extraaxillaribus, breviter pedunculatis; calycis hirsuti lobis ovato-lanceolatis, acutis; corollæ subglabræ lobis ovato-oblongis; coronæ laciniis late oblongis, obtusis, purpureis, facie interiore dentibus duobus collateralibus obtusis instructa; sinibus nudis.

Caulis 2–2½ ped. erectus, teres. *Folia* 2–2½ poll. longa, 1–1½ poll. lata, basi subcordata; petiolus 1–2 lin. longus. *Pedunculus* pollicem longus, cum pedicellis ½-pollicaribus hirsutus. *Flores* ½–⅝ poll. diam. *Corolla* alba.

Hab. Karagué, Dec. 1861 (*Gomphocarpus* no. 7 (216), App. Speke's Journ. 640), *Col. Grant!*

[In the bush near recent cultivation. Stem round, covered with down: the solitary tap-root deep in the ground. Flowers white; the five stamina purple. Karagué hills (December).—J. A. G.]

Plate LXXIV. fig. 1. Flower; fig. 2. Same, expanded; fig. 3. Gynostegium; fig. 4. Segment of corona, seen on inner face; fig. 5. Pollinia and gland; fig. 6. Gynæcium.

4. Schizoglossum Petherickianum, Oliv., sp. nov. Caule striato, hirsuto; foliis oblongis, late acutatis obtusisve, basi obtusis v. subcordatis, breviter petiolatis, utrinque hirsutis; umbellis multifloris, hirsutis, subsessilibus; calycis lobis lineari-lanceolatis; corollæ 5-partitæ lobis oblongo-ellipticis, dorso hirsutis; coronæ laciniis cuneato-oblongis, apice obtuse 4–5-dentatis, facie interioré lamellis duabus superne divergentibus acutatis, lacinia brevioribus instructis.

Folia 1½–2 poll. longa, ½ poll. lata; petiolus ⅛ poll. longus. *Umbellæ* 1–1½ poll. diam.; pedicelli hirti. *Flores* ⅓ poll. diam.

Of this we have but a solitary small specimen, accompanied, through some mistake perhaps, by two labels, one of Col. Grant's, the other of Mr. Consul Petherick; so that I am unable to give the locality with certainty of the specimen described. However, its association with the name of Mr. Consul Petherick will serve to connect it with the Upper-Nile region, which, with Col. Grant, he has done so much to make known.

Plate CXVIII. B. fig. 1. Flower; fig. 2. Appendix of corona; fig. 3. Pollen.

5. Gomphocarpus fruticosus, R. Br.—*G. abyssinicus*, Dcne., in DC. Prod. viii. 557.

G. setosus, Hochst., in hb. Schimp. Abyss. no. 503. *Gomphocarpus* no. 3, App. Speke's Journ. 640.

Hab. Unyoro, Nov. 1862, *Col. Grant!*

A common tropical and subtropical cosmopolitan weed.

[Three feet high, growing erect, near water, Unyoro (November 2); milky throughout. Leaves 8 inches long by ¾ inch; in whorls of fours and sixes. Flowers white, with a pink toothed centre. The rootlets grow in a whorl from the base of the stem.—J. A. G.]

6. GOMPHOCARPUS STENOPHYLLUS, Oliv., sp. nov. Ramis virgatis, apicem versus appresse albido-lanatis, dein glabratis; foliis verticillatis, anguste linearibus acutis mucronatis, marginibus revolutis, supra glabris, subtus obsolete pubescentibus glabratisve; umbellis pedunculatis, extraaxillaribus, paucifloris, puberulis; calycis brevis lobis ovatis, acutis, sparse tomentellis; corollæ laciniis ellipticis; coronæ foliolis truncatis, angulis interioribus denticulo auctis.

Frutex sparse ramosus, 4–5-pedalis; ramis teretibus. *Folia* 4–6 poll. longa, vix 1 lin. lata. *Pedunculi* 1–2 poll. longi, obsolete puberuli; pedicelli ¾–1 poll. longi. *Calyx* lobis 1 lin. longis, ovatis, breviter acuminatis. *Corolla* lobis ¼ poll. longis.

Hab. Kazeh district, 5° S. lat. (*Gomphocarpus* no. 1, App. Speke's Journ. 639), *Col. Grant!*

Plate CXIX. fig. 1. Flower; fig. 2. Appendix of corona; fig. 3. Pollen.

7. GOMPHOCARPUS PHYSOCARPUS, E. Mey.; DC. Prod. viii. 558.—Var. 728.5, App. Speke's Journ. 640. Foliis linearibus v. anguste lineari-lanceolatis.

I cannot see sufficient ground for specifically distinguishing this plant, though the leaves are narrower than in either the Cape specimens or A. Richard's *G. semilunatus* of Abyssinia, which I would refer to the same species.

Hab. Madi, Dec. 1862, *Col. Grant!*

[Found at Madi in December in flower and fruit. The seeds are small, white, and pearly.—J. A. G.]

8. GOMPHOCARPUS GLABERRIMUS, Oliv., sp. nov. Frutex pluripedalis, glaberrimus; foliis oppositis, lineari-lanceolatis, gradatim acute acuminatis, basi in petiolum planum angustatis; umbellis plurifloris, extraaxillaribus; calycis lobis lanceolatis, acutis; corollæ lobis ellipticis, acutiusculis, pilis marginatis; coronæ foliolis truncatis, angulis dente prominulo adscendente instructis.

Caulis teres. *Folia* 5–6 poll. longa, ½–⅝ poll. lata, glaberrima, nervo medio subtus latiusculo conspicuo, venulis inconspicuis; petiolus ¼–½ poll., superne alatus. *Pedunculus* 2–3 poll. longus; bracteis lanceolatis, acuminatis, deciduis; pedicelli pollicem longi. *Calyx* lobis 2–4 lin. longis. *Corolla* ¾–1 poll. diam. *Fructus* . . . .

Hab. Marenga M'Khali, 6° 44′ S. lat., alt. 3193 feet (*Gomphocarpus* no. 4, App. Speke's Journ. 640).

[A very showy bushy plant by water (November), 6° 44′ S. lat., alt. 3000 feet.—J. A. G.]

Plate CXX. fig. 1. Flower; fig. 2. Gynostegium; fig. 3. Appendix of corona; fig. 4. Pollen.

9. GOMPHOCARPUS ROBUSTUS, A. Rich. Fl. Abyss. ii. 40, tab. 70.—*G. drepanostephanus*, Hochst., in hb. Schimp. Abyss. no. 1673.

Hab. Unyoro, No. 555, Aug. 1862, *Col. Grant!*

To this species probably may be referred a specimen in fruit only, *Gomphocarpus* no. 6 of App. Speke's Journ. 640. The follicle is inflated and shortly and softly pubescent.

[4 feet high, with a carrot-shaped root 4 inches long; the whole plant full of a sticky white gum. Stem slightly four-cornered and mouldy-feeling. Leaves 4 by 3 inches. The inflated seed-vessel is elliptical, and 4 inches long, with a slit at its top. The root is eaten raw by the natives, who imagine it gives to them additional power to reproduce their species. A camp-follower ate it without feeling any effect. Unyoro (August).—J. A. G.]

10. GOMPHOCARPUS ?, sp. In fruit only, and genus indeterminable. The stem branches near the base, rising to $\frac{1}{2}$–1 foot; the whole plant glabrous, except pubescent extremities. Leaves conduplicate when dry, rigid, oval-oblong, acute, shortly petiolate, with an obtuse base and undulate margin, looping lateral nerves very prominent beneath, 1–$1\frac{1}{4}$ inch long. Follicles some 4 inches long, apparently from subsessile extraaxillary umbels.

Hab. Karagué, Feb. 1862 (*Brachystelma* no. 468, App. Speke's Journ. 640), *Col. Grant!*

[9 inches high, with a bulbous root $1\frac{1}{2}$ by 1 inch, cutting like a turnip (1870); edible and tasteless. Fruit dead ripe in February at Karagué.—J. A. G.]

11. CALOTROPIS PROCERA, R. Br.; DC. Prod. viii. 535; App. Speke's Journ. 639.

Hab. 7° S. lat. Not again observed until reaching 3° 15′ N. lat., *Col. Grant!*

Extending eastward through Egypt and Arabia to Central India. The "Mudar" of Northern India.

12. ASCLEPIAS MACRANTHA, Hochst. in hb. Schimp. Abyss. (Unio Itin. 1842). Caule basi frutescente, parce hirtello v. glabrato; foliis linearibus vel anguste lineari-lanceolatis, brevissime petiolatis, parce hirtellis, glabrescentibus v. subtus glabris; umbellis 3–4-floris, longe pedunculatis, extraaxillaribus, sæpe quasi terminalibus; calycis lobis lanceolatis, acutis; corollæ lobis oblongo-ellipticis; coronæ laciniis angulis interioribus breviter acute productis, processu falcato subæquilongis.—*Gomphocarpus pedunculatus*, Dcne. in DC. Prod. viii. 558; A. Rich. Fl. Abyss. ii. 40; conf. *G. pauciflorus*, Kl. in Peters, Mossamb. Bot. 276.

Caulis basi parce ramosus, e caudice tuberiformi erectus, pedalis. *Folia* 3–4 poll. longa, $\frac{1}{5}$–$\frac{1}{4}$ poll. lata. *Pedunculi* glabrati, 3–8 poll., pedicelli 1–2 poll. longi. *Flores* $\frac{3}{4}$–1 poll. diam.

Hab. M'bumi, 6° 44′ S. lat. (*Gomphocarpus* no. 5, App. Speke's Journ. 640), *Col. Grant!*

[A bulbous plant, found at 6° 44′ S. lat. in November, at 3000 feet altitude.—J. A. G.]

Plate LXXV. (lettered by mistake *Gomphocarpus longipes*, Oliv., the Plate having been struck off before I prepared the text, and the species retained in the genus to which it was referred in the Appendix to Speke's Journal, to which, indeed, M. Decaisne refers it in the 'Prodromus'): fig. 1. Expanded flower; fig. 2. The same, with the corolla and corona removed; fig. 3. Segment of corona with falcate median process; figs. 4 and 5. Pollen-masses, front and back view.

13. MARGARETTA ROSEA, Oliv.—MARGARETTA*, genus novum (suborder *Euasclepiadeæ*, tribe *Cynancheæ*). Calyx 5-partitus, segmentis lanceolatis acutis basi intus pluriglandu-

* *Margaretta* commemorates by her Christian name the lady of Col. Grant, the name *Grantia* being preoccupied by a genus of Compositæ.

losus. Corolla 5-partita, segmentis oblongo-lanceolatis, apice revolutis. Corona staminea 5-phylla, foliolis imo gynostegio insertis; lamina petaloidea, obovato-rotundata, obtusiuscule deltoideo-dentata, basi intus appendice brevi tridentata aucta; antheræ membrana ovata apiculata incurva terminatæ; massæ pollinis pendulæ, oblongæ, caudiculis brevissimis; stigma muticum obtuse 5-gonum.—*M. rosea*, sp. unica.

Caules $1\frac{1}{2}$–2 ped., simplices v. parce ramosi, e caudice tuberiformi erecti, hirtelli v. breviter pubescenti-tomentosi. *Folia* opposita, anguste oblongo-lanceolata, acutiuscula, basi truncata v. subcordata, breviter petiolata, scabriuscula v. tenuiter hirsutula, $2\frac{1}{2}$–4 poll. longa, basi $\frac{1}{2}$–$\frac{3}{4}$ poll. lata; petiolus $\frac{1}{12}$–$\frac{1}{10}$ poll. longus. *Cymæ* paucifloræ, subsessiles v. breviter pedunculatæ, subterminales, foliis superioribus breviores. *Flores* rosei, $\frac{1}{2}$ poll. diam. *Calyx* extus hirsutus, intus glaber; segmentis erectis, lanceolatis v. ovato-lanceolatis, acutis. *Corona* conspicua, corollam referens, laciniis patentibus, margine eleganter dentatis, corollæ lobos revolutos superantibus.

Hab. Unyoro, July 1862 (*Pentanisia*, App. Speke's Journ. 636), *Col. Grant!*

[12 to 18 inches high; root a tuber, white, milky, and carrot-shaped. Found in a field of *Sesamum*, Unyoro (July). Whole plant very milky. Calyx green; corolla and fringed petal-like segments of the corona pink.—J. A. G.]

Plate LXXVI. fig. 1. Flower; fig. 2. Same, fully expanded; fig. 3. Segment of corolla, ultimately yet more revolute; fig. 4. Segment of the corona, with three basal teeth on the inner face; fig. 5. Flower after removal of corolla and corona; fig. 6. Pollen-mass.

14. Dæmia extensa, R. Br.; DC. Prod. viii. 544.—*D. barbata*?, Klotzsch, App. Speke's Journ. 639.

Hab. 2° and 5° 10′ N. lat., *Col. Grant!* Also Indian.

D. barbata, Kl., of the Zambesi, may well be the same.

[A climber, with white flowers. Found at 2° and 5° 10′ N. lat.—J. A. G.]

15. Leptadenia pyrotechnica, Dcne. in DC. Prod. viii. 629; App. Speke's Journ. 640.

Hab. Nubia, *Col. Grant!*

[A shrub 6 to 8 feet high, and 15 to 20 inches in diameter of stem, with milky or resinous juice. Found on the desert at 20° N. lat. in April. Branches round, green, and leafless; branch-tips curl or cling. Pods 3 inches long. Flowers diminutive and green, with yellow centre. This was the only material we found in the desert to boil our kettles with (though withered grass was about); it blazed, the gases escaping with a considerable noise.—J. A. G.]

16. Leptadenia lancifolia, Dcne. in DC. Prod. viii. 628; A. Rich. Fl. Abyss. ii. 44; App. Speke's Journ. 640.

Hab. Madi, Jan. 1863, *Col. Grant!* Widely diffused in North Tropical Africa.

[A low-growing, rather creeping plant, about the low ground of Madi (January). Stem round, dull-coloured, and tough. Leaf-ribs very flat; a gloss on the upper surface, dull beneath. Petals woolly and yellow inside, green without. The flowers and young shoots are eaten as a vegetable at 3° 15′ N. lat.—J. A. G.]

17. Brachystelma plocamoides, Oliv., sp. nov. Glaberrima; caule e caudice tuberoso napiformi diffuso ramoso spithamæo; foliis angustissime linearibus; floribus extra-axillaribus solitariis, pedunculatis; calycis lobis lanceolatis, acutis; corollæ lobis patentim

radiatis, anguste lineari-lanceolatis; coronæ foliolis basi confluentibus, bifidis, segmentis acutis, dente intermedio brevissimo carnosulo incumbente.

Caulis internodiis 1–2 poll. longis. *Folia* $2\frac{1}{2}$–4 poll. longa, $\frac{1}{24}$–$\frac{1}{12}$ poll. lata. *Pedunculi* semipollicares. *Flores* $1\frac{1}{2}$ poll. diam., atro-purpurei; corollæ lobi basi 1 poll. lati.

Hab. 6° S. lat., Jan. 1861 (*Brachystelma*, nov. sp., App. Speke's Journ. 640).

Resembling *B. lineare*, A. Rich., in habit; but leaves narrower, and the structure of the corona very different, the intermediate tooth opposed to the anthers being much shorter than the bifid outer segments, reduced to a mere fleshy projection from the inner face of the coronal tube; for the segments are confluent into a continuous membranous tube.

[A small plant, with thread-like leaves and weeping branches, in the forest, 6° S. lat., alt. 3700 feet. In flower December, when it was brought to my notice by seeing our Wanyamezi porters eating its flat turnip-shaped root, which peeled like a turnip and resembled liquorice in taste. The juices were sticky, and stained the hands black. Flowers star-shape, purple within, and green without. I ate the root without any peculiar effect being produced.—J. A. G.]

Plate LXXVII. fig. 1. Extremity of leaf; fig. 2. Bud; fig. 3. Expanded flower; fig. 4. Same, corolla removed; fig. 5. Pollen-mass.

LOGANIACEÆ.

1. STRYCHNOS. Specimen without either flower or fruit. So far as it goes, it agrees with *S. Unguacha*, A. Rich. The leaves are coriaceous, strongly reticulate beneath, broadly elliptical, and obtuse.

Hab. Madi, Feb. 1863 (*Strychnos* no. 1, App. Speke's Journ. 640), *Col. Grant!*

[A leafless tree in Ugogo (November), but covered with green fruit the size and shape of oranges; these are edible. Observed in Unyoro also in September in leaf; these are single, in tufts, and have a shining surface. In February, at Madi, the fruit was greenish yellow; the seeds like flat acidulated drops, covered with a tough skin, semitransparent, and irregularly packed in a sweet, yellow, edible pulp. Native names "matonga," "m'gooloongooloo" (Keeao), and "m'phoondoo" (Kin.). —J. A. G.]

A shrub, with pungent trinerved leaves and large orange-like fruit, was observed from 4° S. to 2° N. lat., but no specimens brought home. It was probably a second species of *Strychnos* (App. Speke's Journ. *l. c.*).

GENTIANACEÆ.

1. OCTOPLEURA LŒSELIOIDES, Benth. in herb. Bras. Spruceano; Prog. in Mart. Fl. Bras. vi. 212, tab. 58. fig. 1.

Var. COMPACTA. Herba annua, ramosissima, glaberrima; internodiis brevibus ($\frac{1}{3}$–$\frac{1}{2}$ poll.), angulatis; foliis oppositis, lanceolatis v. ovalibus acutis, basi angustatis; floribus axillaribus et terminalibus solitariis, brevissime pedicellatis; calycis tubo 4-fido 8-nervoso, lobis lanceolatis; corollæ tubulosæ superne parum dilatatæ limbo 4-lobo, lobis ovatis; staminibus medio tubo insertis, filamentis eodem fere æquilongis, antheris parvis, ovoideis ellipticisve; ovario oblongo, stylo subbreviore; stigmate breviter bifido, papilloso.

Herba $\frac{1}{3}$-pedalis (in spp. Africæ occid. pedalis), ramosissima, floribunda. *Folia* $\frac{1}{2}$–1-poll. *Pedicelli* (in var. *compacta*) brevissimi, $\frac{1}{2}$–1 lin. longi. *Flores* axillares, oppositi, decussati. *Calyx* rigidiusculus, persistens, capsulam arcte vaginans, nervis longitudinalibus validis. *Corollæ* tubus calycem paulo superans.

Hab. Madi, Dec. 1862 (App. Speke's Journ. 640), *Col. Grant!* Found also in West Tropical Africa and in North Brazil.

[This small bushy plant was found in swamps at 3° 15′ N. lat. (December).—J. A. G.]

Plate LXXVIII. A. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Transverse section of ovary.

BORAGINEÆ.

1. HELIOTROPIUM EUROPÆUM, L.; DC. Prod. ix. 534; App. Speke's Journ. 641.

Hab. By the Nile, 16° N. lat., *Col. Grant!*

Widely dispersed in the Mediterranean region. Col. Grant's specimen I have not seen.

2. HELIOPHYTUM INDICUM, DC. Prod. ix. 556; App. Speke's Journ. 641.

Hab. 7° 20′ S. lat. Oct. 1860, *Col. Grant!* A tropical cosmopolitan weed.

[Found at 7° 20′ S. lat. in October, near the river M'gæta, in a flat country.—J. A. G.]

3. ECHIUM RAUWOLFII, Delile; DC. Prod. x. 23.—*E. longifolium*, Delile; App. Speke's Journ. 641.

I refer this fragment to *E. Rauwolfii* rather than to *E. longifolium*, on account of its comparatively short corolla and nearly smooth nuts.

Hab. 14° N. lat., *Col. Grant!* A species of the Nile valley.

[From the banks of the Nile, by a well, at 14° N. lat. Flowers in March. It stings the fingers. —J. A. G.]

4. CYNOGLOSSUM MICRANTHUM, Desf.; DC. Prod. x. 149; App. Speke's Journ. 641.

Hab. Karagué, March 1862, *Col. Grant!* From West Africa eastward through India.

[2 feet high, with rather angular stem, and long, straight, carrot-shaped root. Its fruit clings tenaciously to the clothes. A common weed at Karagué in March.—J. A. G.]

5. COLDENIA PROCUMBENS, L.; DC. Prod. ix. 558; App. Speke's Journ. 641.

Hab. Madi, Jan. 1863, *Col. Grant!* Occurs from West Tropical Africa eastward to India and Australia.

[Found growing flat upon mud which had been baked by the sun, at 3° 15′ N. lat., in January, when it was not in flower.—J. A. G.]

CONVOLVULACEÆ.

1. ARGYREIA POPULIFOLIA, Chois.; DC. Prod. ix. 329.—Var. *africana*. Corolla ampla, calyce 6–8plo longior.

Folia ovato-elliptica, late acutata, basi cordata, subtus tenuiter pilosula, 8 poll. longa, 6 poll. lata; petiolus 2½ poll. longus. *Pedunculus* 5–6 poll. longus. *Cymæ* 4–6-floræ, piloso-tomentosæ. *Sepala* exteriora longiora, oblonga, obtusa, ¾ poll. longa. Corolla 3 poll. longa et lata.

Hab. Chopeh, 2° 30′ N. lat., Nov. 1862, *Col. Grant!* (*Argyreia* ?, sp., App. Speke's Journ. n. 640.) As a species, this is not distinguishable from the common Indian one.

[3 feet high; stem thick, round, erect, or bent, milky and mouldy, covered near the root with many small leaflets. Leaves 8 by 6 inches, alternate, underneath white and velvety. After the flower falls, the unequal sepals close and lap one over the other, protecting the round four-celled seed-vessel. Flower four times the length of the longest sepal, 4 inches across its bell-mouth, and delicate mauve in colour. Five stamina, three are equal and half the length of the other two. Hairs at the bases of the filaments. Style extending beyond the closed sepals. Root round, nearly as large as one's head. The natives first propa-

gate it in water, then plant it by the doors of their huts, placing the skulls and teeth of buffalo and hippopotamus by the plant. They believe that a branch of this in the hand while hunting ensures success. Native name "mohambo."—J. A. G.]

2. IPOMÆA PENTAPHYLLA, Jacq. Icon. Rar. 319.—*Batatas pentaphylla*, Choisy; DC. Prod. ix. 339; App. Speke's Journ. 640. See also Meissner, in Mart. Fl. Bras. Convol. 287, for synonymy.

Hab. Above Khartoum, 1863, *Col. Grant!* A wide-spread tropical weed.

[Found upon the left bank of the Blue Nile above Chartoom, 1863.—J. A. G.]

3. IPOMÆA BATATAS, Lam. Dict. vi. 14.—*Batatas edulis*, Choisy; DC. Prod. ix. 338; App. Speke's Journ. 640. For synonymy see Meissner in Mart. Fl. Bras. vii. 282.

Hab. Cultivated from Zanzibar to Egypt; Mininga, *Col. Grant!* Commonly cultivated in the tropics.

[The sweet potatoe is cultivated all the way from Zanzibar to Egypt, and was obtained, either fresh from the fields or in a dried state, nearly all the months of the year. At $3\frac{1}{2}°$ S. lat. (Bogweh), we saw a beer made from it; but it was not pleasant. Guinea-fowl and antelope are very destructive to it. The plant, once in the ground, seemed to be allowed to propagate itself without replanting from season to season. Native name "veeazee."—J. A. G.]

4. IPOMÆA REPTANS, Poir.; DC. Prod. ix. 349; App. Speke's Journ. 640.

Hab. By the Nile &c., *Col. Grant!* Widely spread in tropical Africa and Asia.

[Water-convolvulus, found flowering in March on the edges of the Nile at 18° N. lat. Observed amongst luxuriant vegetation on the equator and at 2° N. lat.—J. A. G.]

5. IPOMÆA ASARIFOLIA, R. & Sch.; DC. Prod. ix. 350; Kotschy & Peyritsch, Pl. Tinn. tab. x.; App. Speke's Journ. 640.

Hab. Nile bank, 14° 30′ N. lat., *Col. Grant!*

Extends westward into Senegambia. Our specimen is without flower, but agrees, so far as it goes, with the species to which it has been referred.

[Found, with flowers fallen off, in March on the right bank of the Nile, at $14\frac{1}{2}°$ N. lat., where it helps to bind down the sand of the shore.—J. A. G.]

6. IPOMÆA PALMATA, Forsk.; DC. Prod. ix. 386; App. Speke's Journ. 640.

Hab. Banks of the Nile, March 1863, *Col. Grant!* Extends westward to Sierra Leone and Angola.

[Common in March on the banks of the Nile at 9° N. lat., where the river is like a sewer running through marsh.—J. A. G.]

7. IPOMÆA RENIFORMIS, Choisy, in DC. Prod. ix. 351; App. Speke's Journ. 640; Schweinf. Beitr. Fl. Æthiop. 96.

Hab. By the Nile, March 1863, *Col. Grant!* Also in India.

[A yellow-flowered flatly growing creeper, found on the hard shores of mud in the Noer country at $8\frac{1}{2}°$ N. lat.—J. A. G.]

8. IPOMÆA CAPITATA, Choisy, in DC. Prod. ix. 365; App. Speke's Journ. 640.

Hab. Madi, Dec. 1862, *Col. Grant!*

[Twines round the bushes at 3° 15′ N. lat. in December.—J. A. G.]

9. Ipomæa involucrata, P. de Beauv.; DC. Prod. ix. 365; App. Speke's Journ. 640.
Hab. Unyoro, Nov. 1862, *Col. Grant!* Widely diffused in Tropical Africa.
[A climber. Equator and 2° N. lat.—J. A. G.]

10. Ipomæa pterygocaulos, Choisy, in DC. Prod. ix. 381; App. Speke's Journ. 640.
Hab. Banks of Nile, north of Gondokoro, *Col. Grant!*

In Col. Grant's specimen (which does not show the corolla) the leaves are all deeply 5-lobed; but so they become on the same shoot with the 3-lobed leaves in the type specimens of Schimper.

11. Ipomæa commatophylla, A. Rich. Fl. Abyss. ii. 65.—*Convolvulus commatophyllus*, Steud. in hb. Schimp. Abyss. 783; App. Speke's Journ. 640. Var. *angustifolia*?

Col. Grant's plant differs from the type in its much narrower leaves, with a narrow lateral lobe on each side; but otherwise I think it may be conspecific. The seeds are more or less hairy, not glabrous, as are described the seeds of *I. Kotschyana*, Hochst. (DC. Prod. ix. 354).

Hab. 2° N. lat., *Col. Grant!*

[Upon and near surface rocks in the forest at 2° N. lat. (December).—J. A. G.]

12. Ipomæa pinnata, Hochst.; DC. Prod. ix. 353. Caule diffuso, elongato, procumbente, parce ramoso, tenuiter piloso, lineis leviter elevatis longitudinaliter notato; foliis pinnatipartitis, laciniis anguste linearibus acutis; pedunculis folio æquilongis, 1–3-floris, bracteatis; bracteis anguste linearibus; sepalis ovato-oblongis, longe acuminatis, corollam tubuloso-campanulatam superantibus; capsula pilosa; seminibus glabris.

Folia 1–2 poll. longa, glabra v. parce pilosa. *Calyx* $\frac{1}{3}$–$\frac{1}{2}$ poll. longus. *Corolla* alba. *Capsula* pilis sparsis patentibus hirta.

Hab. Madi, Dec. 1862 (App. Speke's Journ. 640), *Col. Grant!* Extends southward to the Zambesi, and probably west to Senegal.

[In crevices of rocks, Madi (December). Stem long, and running on the ground, four-cornered, hairy, and milky. Flowers white. Seed-vessel brown, hairy, four-celled, with a single seed in each cell. An elegant little plant.—J. A. G.]

Plate LXXIX. fig. 1. Expanded flower; fig. 2. Corolla, laid open; fig. 3. Stamen; fig. 4. Pistil; fig. 5. Longitudinal section of ovary; fig. 6. Capsule enclosed in calyx; fig. 7. Transverse section of ovary; fig. 8. Seed.

13. Ipomæa Grantii, Oliv., sp. nov. Caule volubili, glabrescente (in sicco), compresso v. obtuse angulato; foliis late ovatis, basi cordatis truncatisve, plus minus sinuato-lobatis, supra glabris, subtus præcipue in nervis venulisque prominentibus dense albido-tomentosis; pedunculis 2- v. paucifloris; calycis tenuiter lanati lobis obtusissimis v. truncatis, subæqualibus; corolla ampla, infundibuliformi, purpurascente.

Folia 5–6 poll. longa, 3–4 poll. lata; petiolus 2–3$\frac{1}{2}$ poll. longus. *Pedunculi* axillares, $\frac{1}{2}$ poll. longi; bracteæ deciduæ; pedicelli $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, tomentoso-lanati. *Calyx* 6–7 lin. longus. *Corolla* tubo circiter 3 poll. longo. *Filamenta* basi barbata.

Hab. Unyoro, Aug. 1862, *Col. Grant!*

Nearly allied to *I. Gerrardi*, Hk. f. (Bot. Mag. t. 5651), of Natal, in which the leaves are early glabrate below and the peduncles 1-flowered; and to *I. albivenia*, Don, in which the peduncles are also 1-flowered and the stem tubercled.

[A magnificent climber, twining on trees up to a height of 15 feet, with large purple-green leaves deeply cupped underneath. Stem slightly milky. Calyx green; corolla of a pale port-wine colour. Seeds brought home to Kew. Found at Unyoro in August. A species with large (?) palmated leaves, similarly indented

underneath, was found in November at Usui growing up with last year's plant, which was in seed. The flowers were purple. The seed-vessel had four divisions; and the seeds were covered with a mass of white silky fibre ¾ inch long, but of no strength.—J. A. G.]

Plate LXXX. fig. 1. Base of corolla-tube, showing insertion of the stamens.

14. IPOMÆA, sp.? Leafy specimen only. Leaves rotundate in circumscription, deeply divided, the lower segments from the base of the lamina, the upper from the middle of the midrib; segments broadly linear, acute, broadly crenate-undulate when pressed flat, the tissue between the lateral veins of each segment being remarkably bullate; glabrous above, with thinly scattered hairs on the neuration beneath; petiole pubescent. It may be related to the foregoing species.

Hab. 5° 26′ S. lat., 33° E. long. But a single specimen observed, *Col. Grant!*

[A climber, with handsome leaves indented underneath. Buds in January at Tura, 6° 26′ S. lat. Purple. Rare.—J. A. G.]

15. HEWITTIA BICOLOR, Wt. & Arn.; Wight, Clavis Analyt. Convol. Penins. Ind. 7; App. Speke's Journ. 641.—*Shutereia bicolor*, Choisy, in DC. Prod. ix. 435.

Hab. Banks of Nile, Unyoro, Nov. 1862, *Col. Grant!*

A variable plant, both in form of leaves and number of flowers to each peduncle, if we are right in including the African specimens, from various parts of the tropics, in the same species. If Klotzsch's two species described in Peters's Mossamb. Bot. 242–3 are to be maintained, Col. Grant's plant may belong to one of them.

16. CONVOLVULUS MALVACEUS, Oliv.—*Breweria malvacea*, Klotzsch, in Peters, Mossamb. Bot. 245, t. 37.—*Breweria* nos. 1 and 2, App. Speke's Journ. 641.

Hab. Usui, 2° 42′ S. lat., and Chopeh, 1° 40′ N. lat., Nov. 1861 and 1862.

I refer Col. Grant's specimens to this species, notwithstanding their apparently shorter corollas. The leaves of the Usui specimen are conspicuously sinuate-lobate.

[No. 1 found on the slopes of Usui at 2° 42′ S. lat., alt. 4200 feet, with erect, bell-like, white flowers and velvety silvery leaves; No. 2 was common near huts in Chopeh at 1° 40′ N. lat. (November).—J. A. G.]

17. EVOLVULUS ALSINOIDES, L.; DC. Prod. ix. 447.—*E. linifolius*, L.; DC. *l. c.* 449; App. Speke's Journ. 641. For synonymy see Bentham, Fl. Austr. iv. 438.

Hab. Unyoro, July 1862, *Col. Grant!* Generally dispersed through tropical countries.

[Grows flat upon the ground near cultivation at Unyoro, flowering in July. Whole plant covered with white hair. Flowers blue, of the colour of the forget-me-not.—J. A. G.]

18. EVOLVULUS DICHONDROIDES, Oliv., sp. nov. Caulibus filiformibus repentibus, hirtellis; foliis rotundatis v. late elliptico-rotundatis, apice truncatis retusisve, breviter petiolatis, subtus tenuiter hirtellis glabratisve; floribus axillaribus solitariis, breviter pedunculatis, pedunculis recurvis; capsula 1-loculari.

Folia 5–7 lin. longa, ½ poll. lata; petiolus ⅛ poll. longus. *Pedunculi* petiolo æquilongi. *Sepala* elliptica, acuta, pilosula. *Ovarium* ut videtur uniloculare.

Hab. Uganda, July 1862 (*Convolvulacea dubia*, App. Speke's Journ. 641), *Col. Grant!*

Notwithstanding the apparent absence of a dissepiment in the ovary, this plant must be an *Evolvulus*, and very near to *E. nummularius*, L., of Tropical America.

[A diminutive but very pretty plant, without any erect branches. It adheres tenaciously to the level bare ground of plantain-groves by rootlets from all parts of its stem. Flowers (July) snow-white. Seed-vessel three-cornered, many-seeded. Styles 2, deeply forked. After the flower falls off, the seed-vessel turns into the ground, like the *Arachis hypogea*, and propagates.—J. A. G.]

Plate LXXVIII. B. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamen; fig. 4. Pistil; fig. 5. Calyx and capsule; fig. 6. Capsule, transverse, and fig. 7. Vertical section.

19. Convolvulacea ?—*Aniseia* ?, sp., App. Speke's Journ. 641.

Hab. 2° 42′ S. lat., Usui valley, prostrate upon the bare ground, *Col. Grant!*

In the absence of flower and fruit, the genus of this curious plant must remain undetermined. The leaves are sessile, ovate-oblong, obtuse, mucronate, from a cordate base, glabrous above except the midrib and margin, pubescent beneath. It may be an *Evolvulus* near the Brazilian *E. latifolius*, or related to Dr. Klotzsch's Zambesi genus *Calycanthemum*, or no *Convolvulacea* at all.

Solanaceæ.

1. Solanum nigrum, L.; DC. Prod. xiii. 50.

Hab. Mininga, Karagué, and by the Nile, 28° N. lat. (*Solanum* no. 1, App. Speke's Journ. 641).

Two forms of this variable cosmopolitan weed.

[4 feet high, erect, and succulent; growing under a fig-tree at 5° S. lat. Corolla white. Fruit diminutive and red, in clusters. Root long, white, and twisted. Its leaves are eaten boiled.—J. A. G.]

2. Solanum melongena, L.; App. Speke's Journ. 641.—*S. esculentum*, Dun.; DC. Prod. xiii. 355.

Hab. 5° S. lat., *Col. Grant!* Commonly cultivated in warm countries.

3. Solanum, sp., which I cannot precisely identify; apparently allied to *S. melongena* and the forms which are associated with it. It is unarmed, though with indication of aculei on the calyx, and shortly and closely clothed with a yellowish tomentum, almost scabrid on the upper side of the ovate-oblong obtusely subacuminate leaves.

Hab. 5° S. lat., 33° E. long. Common in waste fields, 3800 feet. Berry light yellow (*Solanum* no 2, App. Speke's Journ. 641), *Col. Grant!*

4. Solanum duplo-sinuatum, Klotzsch, in Peters, Mossamb. Bot. 233 (ex descriptione).

Hab. Unyoro, Nov. 1862 (*Solanum* no. 3, App. Speke's Journ. 641), *Col. Grant!*

The only discrepancy between our plant and the description consists in the absence of hairs on the base of the style.

[Low-growing, about a foot high. Stems thick, round, with prickles of $\frac{1}{4}$ inch, and a stellate pubescence. Leaves a span long, with straight angry prickles of $\frac{1}{2}$ inch, those on the upper surface almost corresponding with those underneath. Flowers mauve-colour, closing with the day. Stamens yellow with brown tips. By paths and huts, Unyoro (November). Native name "toong'goojah" (Kis.).—J. A. G.]

5. Capsicum conicum, Mey., var. *orientale*; DC. Prod. xiii. 415; Schweinf. Beitr. Fl. Æthiop. 87.—*C. frutescens*, L.; App. Speke's Journ. 641.

Hab. Unyoro, Nov. 1862, *Col. Grant!*

[This grows wild at 2° N. lat., and also further south.—J. A. G.]

6. Lycopersicum esculentum, Mill.; DC. Prod. xiii. 26; App. Speke's Journ. 641.

Hab. 7° 27′ S. lat. and elsewhere, *Col. Grant.*

I have not seen a specimen.

[The natives at 7° 27′ S. lat. did not know the use of the fruits, and were surprised to see us eat them. Frequently met with in the countries between Unyoro and Ugogo.—J. A. G.]

7. Physalis æquata, Jacq. fil.; DC. Prod. xiii. 447.—*P. angulata*, App. Speke's Journ. 641.

Hab. Unyoro, 1862, *Col. Grant!*

Determined by comparison with the plate in Jacq. Eclog. ii. 137. The fruit-calyx does not present any appearance of angulation.

[Found by huts at 2° N. lat., where the natives use the leaves as a vegetable.—J. A. G.]

8. Withania somnifera, Dun. in DC. Prod. xiii. 453; App. Speke's Journ. 641.

Hab. Near villages, 3° 15′ N. lat., *Col. Grant!*

[2 to 3 feet high, growing rather flatly near old dwellings at Madi. Has the appearance of the Chinese gooseberry-bush. Thornless; stem woody and brown. Two leaves grow usually from almost one point. Flowers colourless, petal-tips white. The leaves are cast off by the dense clusters of ripe scarlet fruit, which conceal the stem. Seeds flat, white, and roundly three-cornered. Native name "năkēetong'o." The Sultan of Ukuni had the roots hung over the door of his hut, considering this lucky. I asked a Nubian its uses; and he replied by rubbing his arms, thereby implying that it had a medicinal virtue.—J. A. G.]

9. Hyoscyamus muticus, Linn.—*Scopolia mutica*, Dun. in DC. Prod. xiii. 552. *S. Datora*, App. Speke's Journ. 641.

Hab. By the Nile, 28° N. lat., *Col. Grant!*

I refer this to *H. muticus*, from the absence of spinescent tips to the calyx-lobes. Dr. Schweinfurth also gives it a wide distribution in the lower Nile and Libyan region.

[Found on the banks of the Nile at 28° N. lat., growing as a bush, flowering in May, with long tapering root. The captain of our boatmen took several plants on board, dried them, and then smoked them in a pipe to cure himself of chest-complaint and spitting of blood. I was informed that it is also so used in delirium tremens cases. Native name "thatoora."—J. A. G.]

10. Nicotiana rustica, L.; DC. Prod. xiii. 563; App. Speke's Journ. 641.

Hab. Cultivated at Khartoum &c., *Col. Grant!*

[This species was only met with when we reached 17° N. lat. (Khartoum), where, and further north, fields of it are grown by irrigation. The dried leaf of this is paler and not so full-flavoured as *N. Tabacum.* —J. A. G.]

11. Nicotiana Tabacum, L.; DC. Prod. xiii. 557; App. Speke's Journ. 641 (leaf only).

Hab. Cultivated from 7° S. lat. to 4° N. lat., *Col. Grant!*

[Seen cultivated from 7° S. lat. to 4° N. lat. The leaves are sold in many forms—plaited like a coil of hair, manufactured into cakes the consistence of peat, or sold as broken-up or cut tobacco. The best was obtained at Karagué, where a peculiar mode of mixing other ingredients with it (cow's urine, I believe) makes it most agreeable smoking. It is seldom or ever chewed; but the Wanyamezi stuff quids of it up their noses.—J. A. G.]

12. Datura Stramonium, L.; DC. Prod. xiii. 540; App. Speke's Journ. 641.

Hab. Gardens, 1° 42′ S. lat., &c., *Col. Grant.* No specimen.

[4 feet high, in waste gardens of Karagué. The fruit ripe in November. Our Wahino men tell me that matting is made of it in their country. Native name "nanāha."—J. A. G.]

SCROPHULARIACEÆ.

1. DORATANTHERA LINEARIS, Benth.; DC. Prod. x. 347; App. Speke's Journ. 641.

Hab. By the Nile, 16° N. lat., April, *Col. Grant!*

2. HERPESTIS FLORIBUNDA, Br.; DC. Prod. x. 400; App. Speke's Journ. 642.

Hab. Madi, Dec. 1862.

[Grows in swamps at 3° 15′ N. lat., in December. A sturdy rather bushy plant, about 6 inches in height.—J. A. G.]

3. DOPATRIUM MACRANTHUM, Oliv., sp. nov. Caule erecto, elongato, basi parum ramoso; foliis caulinis floralibusque minimis squamæformibus, ovatis; calycis breviter 5-lobi lobis ovatis, obtusis; corollæ tubo calyce 6plo longiore, labio postico 2-fido, lobis rotundatis, obtusis, antico amplo, obtuse 3-lobo.

Caulis glaber, 8–10 poll. *Folia* radicalia ut videtur oblanceolata, $\frac{1}{3}$–$\frac{3}{4}$ poll. longa; caulina 1 lin. longa. *Pedicelli* floriferi erecti, $\frac{1}{4}$ poll. longi v. breviores. *Calyx* campanulatus, minute pubescens, 5-dentatus, $\frac{1}{7}$–$\frac{1}{8}$ poll. longus. *Corolla* purpurea v. violacea, tubo $\frac{3}{4}$ poll. longo, fauce curvulo vix dilatato, limbo $\frac{3}{4}$–$\frac{5}{6}$ poll. lato. *Antheræ* loculis subæqualibus ciliatis, connectivo dorsali incrassato.

Hab. 3° 15′ N. lat. (*Dopatrium senegalense*, App. Speke's Journ. 641), *Col. Grant!*

Differs from *D. senegalense*, Bth., in the much less deeply divided calyx, the teeth being but about one fourth the length of the tube, as well as in the shorter pedicels and larger flowers.

[Grows in the water and mud which has accumulated on the surface of flat masses of granite rock, at 3° 15′ N. lat., in December.—J. A. G.]

Plate CXXI. A. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anther.

4. TORENIA PLANTAGINEA, Benth.; DC. Prod. x. 411.—*T. pumila*, App. Speke's Journ. 641.

Hab. 4° 45′ S. lat., *Col. Grant!*

In Col. Grant's specimens the scape is 1½–2 inches long.

[A diminutive plant, found in bogs at Karagué, alt. 5500 feet. Leaves coarsely covered with white hairs. Sepal-tips purplish; corolla white, streaked with purple inside. Root thick and large, with many fibres.

The brother of the Karagué Sultan gave me this plant as a recipe for inflamed throat. The root is taken with salt as a gargle.—J. A. G.]

5. VANDELLIA LOBELIOIDES, Oliv., sp. nov. Erecta v. adscendens, glabra; caule simplici v. basi ramoso; foliis linearibus acutis, integris, floribus axillaribus solitaribus, pedicellis erectis folio florifero 3–4plo longioribus; calyce 5-fido, dentibus acutis; corollæ labio superiore late oblongo, subtruncato, inferiore 3-fido, lobis rotundatis; filamentis anticis basi obtuse tuberculatis, subito curvatis.

Herba erecta v. caulis debilis adscendens, $\frac{1}{2}$–1-pedalis. *Folia* opposita, pollicem longa, $\frac{1}{8}$ poll. lata, inferiora subtus interdum purpurascentia, superiora in eodem pari inæqualia, floralia breviora. *Pedicelli* $\frac{2}{3}$–1$\frac{1}{4}$ poll. longi, tempore florifero erecti. *Flores* $\frac{1}{2}$ poll. longi. *Capsula* . . . .

Hab. Madi, Dec. 1862 (*Ilysanthes* no. 1, App. Speke's Journ. 642), *Col. Grant!*

[6 inches high, with erect stem and violet flowers, growing amongst swamp-grass, at 3° 15′ N. lat., in December.—J. A. G.]

Plate CXXI. B. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Pistil.

6. Bonnaya pusilla, Oliv., sp. nov. Fere glabra; caule basi repente, florifero erecto v. adscendente; foliis lineari-lanceolatis ovalibusve, obtusiusculis, integris; pedicellis sæpius folio subæquilongis, fructiferis haud deflexis; calyce breviter 5-lobato, dentibus ovatis, obtusis; corollæ labio superiore erecto, 2-dentato, inferiore convexo, late 3-lobo; staminodiis minutissimis; capsula calycem duplo excedente lineari-oblonga, valvis divergentibus.

Caulis striatus, glaber v. minute et parce pilosulus, foliiferus $1\frac{1}{2}$–2 poll. longus. *Folia* $\frac{1}{4}$–$\frac{1}{2}$ poll. longa, nervo medio subtus interdum papilloso. *Flores* $\frac{1}{4}$–$\frac{1}{3}$ poll. longi. *Calyx* tubo dentibus 3–4plo longiore. *Capsula* $\frac{1}{4}$–$\frac{1}{3}$ poll. longa.

Hab. Karagué, 1861 (*Ilysanthes* no. 3, App. Speke's Journ. 642), *Col. Grant!*

[An alpine-like diminutive plant, 1 to 2 inches high, by water and rock (altitude 5500 feet), with a fibrous root and thick stalkless leaves. Corolla white, slightly marked on the inside with red.—J. A. G.]

Plate CXXII. A. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Pistil; fig. 4. Capsule, after dehiscence, and calyx.

7. Bonnaya trichotoma, Oliv., sp. nov. Herbula diffusa, trichotoma, glaberrima; ramis quadrangulis; foliis lineari-ovalibus acutis; pedicellis alternis calyce longioribus, fructiferis deflexis; calycis 5-dentati dentibus tubo 5plo brevioribus acutis; corollæ labio inferiore profunde 3-lobato, lobis oblongis v. ovato-oblongis; staminodiis integris, subsessilibus; capsula ovali, calyce fere duplo longiore.

Herba 2–4-pollicares. *Folia* $\frac{1}{4}$–$\frac{1}{3}$ poll. longa. *Flores* 2–3 lin. longi.

Hab. Madi, Dec. 1862 (*Ilysanthes* no. 2, App. Speke's Journ. 642), *Col. Grant!*

[A diminutive bushy plant, found in flower in December at 3° 15′ N. lat., on rocky ground.—J. A. G.]

Plate CXXII. B. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Capsule after dehiscence, and calyx.

8. Scoparia dulcis, L.; DC. Prod. x. 431; App. Speke's Journ. 642.

Hab. 5° 1′ S. lat., alt. 4000 feet, *Col. Grant!* A common weed in warm countries.

[A foot or more high. Common in waste ground at an altitude of 4000 feet, 5° S. lat.—J. A. G.]

9. Veronica Anagallis, L.; DC. Prod. x. 467; App. Speke's Journ. 642.

Hab. Coast-range, alt. 4700 feet, 6° 38′ S. lat., *Col. Grant!* A widely spread aquatic in the Old World.

10. Buchnera usuiensis, Oliv., sp. nov. E basi lignosa erecta, parce ramosa; caule strigilloso-pubescente; foliis ovalibus v. superioribus lineari-ovalibus, acutis, glabris v. marginibus nervoque medio subtus parce scabridis, in bracteas abeuntibus; spica imbricata, multiflora; bracteis lineari-acuminatis, floribus æquilongis; corollæ tubo calyce subduplo longiore puberulo; capsula apiculata, calycem haud superante.

Caulis $1\frac{1}{2}$–2-ped., basi ramosa; ramis erectis, teretiusculis. *Folia* opposita v. superiora subopposita, sessilia, $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa, $\frac{1}{6}$–$\frac{1}{4}$ poll. lata. *Spica* 3–6 poll. longa; bracteis erectis, persistentibus demum rigidiusculis. *Calyx* tubo 10-nervoso, nervis alternis validioribus, dentibus subulatis, acutis, strigillosis, dente postico minore. *Corolla* $\frac{3}{4}$ poll. longa.

Hab. Usui, alt. 4500 feet, Nov. 1861 (*Striga senegalensis*, App. Speke's Journ. 642), *Col. Grant!*

[Found on the Usui heights, at an altitude of 4500 feet, in November. Dries black, and is 2 feet high.—J. A. G.]

Plate CXXII. C. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anther; fig. 4. Pistil.

11. STRIGA HERMONTHICA, Benth.; DC. Prod. x. 502; App. Speke's Journ. 642.

Hab. Unyoro, Aug. 1862, *Col. Grant!* Widely spread in Eastern Africa.

[Common in the fields of Unyoro in September. Stem erect, a foot high. Flowers pink.—J. A. G.]

12. RHAMPHICARPA FISTULOSA, Benth.; DC. Prod. x. 504; App. Speke's Journ. 642.

Hab. Madi, Dec. 1862, *Col. Grant!* Widely diffused in North Tropical Africa.

[Found by a swamp on meadow-ground at Madi, 3° 15′ N. lat. Flowered in December.—J. A. G.]

13. RHAMPICARPA RECURVA, Oliv., sp. nov. Herba annua, ramosa, erecta; foliis pinnatisectis, segmentis angustissimis, minute tuberculato-setulosis; calycis lobis lanceolatis, recurvis, tubo subæquilongis; corollæ tubo calyce pluries longiore curvulo, tenuiter glanduloso-puberulo, labio superiore bifido, segmentis breviter v. quadrato-ovatis, labio inferiore 3-fido, segmentis obovatis.

Herba pedalis; ramis glabratis vel faciebus alternis obsolete strigillosis. *Folia* pollicem longa, opposita v. superiora alterna. *Bracteæ* pinnatisectæ. *Pedicelli* 1 lin. longi. *Flores* $\frac{2}{3}$–$\frac{3}{4}$ poll. longi. *Calyx* tubo parce setuloso, campanulato.

Hab. Karagué, Feb. 1862 (*Scrophulariacea dubia* no. 402, App. Speke's Journ. 642), *Col. Grant!*

[Found at an altitude of 4500 feet, near water, at Karagué. Stem purple, a foot high, approaching to square, smooth, shining, and woody. Leaves filiform. Root fibrous. Corolla white; the five divisions of the calyx recurved.—J. A. G.]

Plate LXXXVII. A. fig. 1. Flower; fig. 2. Calyx; fig. 3. Corolla, laid open; fig. 4. Stamen; fig. 5. Pistil.

14. CYCNIUM ADONENSE, E. Mey.; DC. Prod. x. 505. Scabrum; caule decumbente; foliis ovalibus vel oblongo-ellipticis in petiolum brevem angustatis, acutis v. obtusiusculis, dentato-serratis utrinque scabridis; floribus breviter pedunculatis axillaribus; calycis striati dentibus acutis; corollæ tubo calyce plus duplo longiore, limbi labio superiore bilobato, inferiore profunde trifido.—*C. longiflorum*, Hb. Eckl. & Zeyh.

Caulis pubescenti-hispidulus, decumbens v. prostratus. *Folia* 2–3 poll. longa, $\frac{2}{3}$–1 poll. lata; petiolus superne alatus, 1–3 lin. longus. *Pedunculi* hirtelli, $\frac{1}{3}$–$\frac{1}{2}$ poll. longi. *Bracteolæ* anguste lineares, $\frac{1}{6}$–$\frac{1}{4}$ poll. longæ. *Calyx* 1–1$\frac{1}{4}$ poll. longus, nervis scabridis, lobis lanceolatis v. ovato-lanceolatis, acutis. *Corolla* tubo 2$\frac{1}{2}$ poll. longo, pilosulo, limbo 3 poll. diametro.

Hab. Madi, Dec. 1862 (*Cycnium*, sp. nov., App. Speke's Journ. 642).

[Not a common plant. Found on the bare parts of the sandy heights about Madi in December. It crawls snake-like along the ground. Stem purple; root black and fibrous, and the plant dries black; calyx a purplish green; corolla white, the upper part of the tube above the stamens distinctly five-grooved and hairy externally. Seed-vessel four-celled, with numerous seeds. Native name "m'sweera-m'dogo." The people of Unyamezi, when bitten by a black snake with white throat, cure the bite by using the black fibrous root of this crawling plant.—J. A. G.]

Var. adscendens, floribus minoribus (*C. longiflorum*, Eckl. & Zeyh. in App. Speke's Journ. 642).

Hab. East-coast range, Nov. & Dec. 1860, *Col. Grant!*

[A bushy plant, 1 foot or more in height. Corolla pink, or sometimes white, drying purple-black. Found at Karagué, Unyoro, and on the east-coast range generally, growing in large clusters at a season when there was nothing else in flower.—J. A. G.]

Plate LXXXVIII. fig. 1. Corolla-tube, laid open; fig. 2. Stamen.

15. Sopubia ramosa, Hochst.; DC. Prod. x. 522.—*Rhaphidophyllum ramosum*, Hochst., in hb. Schimp. Abyss. 507; App. Speke's Journ. 642.

Hab. Madi, Dec. 1862, *Col. Grant!*

[An erect, hardy, woody plant, 2 to 4 feet high. Found in October on the grassy plateaux of Unyoro. Leaves strongly scabrous all over. Corolla pink; filaments yellow; anthers a glossy purple. Root long, tapering, and crooked. The people of Heeao wash its ashes and use the water so salted to cook their food.—J. A. G.]

16. Sopubia karaguensis, Oliv., sp. nov. Suffrutescens, ramosa; ramis adscendentibus, puberulis; foliis inferioribus oppositis et in axillis fasciculatis, 3–5-pinnatipartitis, segmentis anguste linearibus pilosulis; floribus racemosis, pedicellatis; calycis tomentosi profunde 5-fidi lobis ovato-lanceolatis, acutis; corollæ subrotatæ lobis rotundatis, obtusis.

Suffrutex ¾–1-pedalis, ramosus, elegans. *Folia* ½–1 poll. longa, paucipartita, carnosula. *Pedicelli* flore sæpius breviores; bracteolæ anguste lineares, calycem vix æquantes. *Calyx* tubo dense tomentoso.

Hab. Karagué, Dec. 1861.

[An elegant plant with a woody stem, which has a tendency to purple. Flowers of a rich pink colour in December, when it was found on the hill-top at Karagué at an altitude of 5500 feet.—J. A. G.]

Plate LXXXVII. B. fig. 1. Expanded flower; fig. 2. Corolla and stamens; fig. 3. Pistil.

Lentibularieæ.

1. Utricularia inflexa, Forsk.; DC. Prod. viii. 4.

Hab. Nile, 2° N. lat., Oct. and Nov. 1862 (*Utricularia* no. 2, App. Speke's Journ. 642), *Col. Grant!*

2. Utricularia reflexa, Oliv., in Journ. Linn. Soc. ix. 146.

Hab. Unyoro, Aug. 1862 (*Utricularia* no. 1, App. Speke's Journ. 642), *Col. Grant!*

[Found in August, floating on the marshes, at 2° N. lat., with yellow flowers.—J. A. G.]

Bignoniaceæ.

1. Stereospermum dentatum, A. Rich. Fl. Abyss. ii. 58.—*Var.* foliolis 1¾–2½ poll. longis, subdistanter serrulatis, acutiusculis v. breviter acuminatis, supra obsolete scabrulis, subtus glabris.

Hab. Madi, Feb. 1863 (*Stereospermum* no. 1, App. Speke's Journ. 642).

[A tree, in full bloom during January at 3° N. lat., and overhanging water. Leaves compound, 4½ pairs, bright or pale green, with dull surfaces and flattened ribs. The leaves are used by the burrowing sand-bee for holding meat for the young bees; these cocoons are found in sand saturated with water. Corolla pink-white, with a peculiarly flattened tube; petals party-coloured, the three together are pink, the other two white. Seed-vessel resembles a whip-snake, being 18 inches long,

uniform, round, but with four distinct angles, purpled over and spotted with silver-colour. Numerous seeds. Native name "Molōlo." This tree was only observed here, where the natives had lopped off the upper branches of several specimens. Its wood seemed useless and pithy.—J. A. G.]

To the same species may be referred *Stereospermum discolor,* App. Speke's Journ. 642, which differs in having its leaflets pubescent, especially beneath, so far agreeing more nearly with Richard's description of his *S. dentatum,* to which he refers the plant of Schimper's Herb. Abyss. 308, distributed as *Bignonia discolor,* R. Br. ?

[An ordinary-sized tree, which ornaments the sides of the hills (1200 feet high), at 6°–7° S. lat., with its rich blossom, which perfumes the air.—J. A. G.]

2. Spathodea. Two detached flowers only, agreeing with *S. campanulata,* P. de Beauv., excepting that the arcuate apex of the tawny-tomentose calyx is less acuminate than in our numerous specimens of the western plant.

Hab. Unyoro, 1862 (*Spathodea* no. 2, App. Speke's Journ. 642), *Col. Grant!*

[A tree, 20 feet high, with 4 feet of girth, flowering by marshy ground at Unyoro on the 8th September. Bark smooth, of a light clay-colour. It branches from near the ground, giving the tree a bushy definite outline. Leaves drooping, compound, with about three and a half pair of ovate leaflets, which are 4 by 3 inches, giving a deep shade. Flowers in rich clusters from the tips of the branches; no bloom can surpass their brilliant scarlet colour. Calyx velvet-green; corolla the size of a child's open hand. Not observed anywhere else in flower, and unknown to our men.—J. A. G.]

3. Spathodea ? A single leaf, 1½ foot long, with nine 6-inch, oblong-elliptical, petiolate, serrate, glabrous leaflets, agreeing pretty well with *S. lævis,* P. de Beauv.

Hab. Madi, Dec. 1862 (*Spathodea* no. 1, App. Speke's Journ. 642), *Col. Grant!*

[A tree with 3 feet girth of stem. Leaves coriaceous, compressed, and scabrous; resembles *Kigelia* in mode of growth. Found at 3° 15′ N. lat. in December.—J. A. G.]

4. Spathodea no 3, App. Speke's Journ. 642, I have not seen. Col. Grant describes it as yellow-flowered, with capsules 2 feet long, yellow, and velvety.

Hab. 1° 42′ S. lat., *Col. Grant!*

5. Kigelia pinnata, DC. Prod. ix. 247; Seemann, in Trans. Linn. Soc. xxiii. 22; App. Speke's Journ. 642. Two corollas only.

Hab. Madi, Feb. 1863, *Col. Grant!*

[Found everywhere. Bark a cold stone-grey colour, not roughed by scales, and often found split from growth or other cause. If the outer coating be scraped off, a pure white surface is exposed. Leaves hard and dry. Flowers in January at 3° N. lat., in 2-feet long pendants, reddish purple and sometimes yellow. Seed-vessel a long pendulum as thick as the thigh, round-ended, and used in the native game of bowls; the seeds are eaten in dearths. Epiphytes were gathered off its green moss-covered boughs. Native names "m'sankwa," "malegæa," and "moongootwah." Used for firewood and bows; the fruit as a target in archery; the seeds eaten roasted; the leaves used like sand-paper.—J. A. G.]

Acanthaceæ.

1. Thunbergia alata, Boj.; T. Anders. in Journ. Linn. Soc. vii. 19; App. Speke's Journ. 643.

Hab. Unyoro, July 1862, *Col. Grant!*

[Grows flat on the ground, but also twines about grass. Unyoro, July. The whole plant is coarsely hairy. The leaves, if pressed with the fingers, feel like rough velvet. Flower a purple-pink salmon-colour. —J. A. G.]

2. THUNBERGIA OBLONGIFOLIA, Oliv., sp. nov. Caule erecto, obtuse 4-angulo, 4-sulcato, parce præcipue in nodis pilosulo ramoso; ramis erectis; foliis oblongis v. oblanceolato-oblongis, sessilibus obtusis v. late acutatis, integris, penninerviis, margine subtusque pilosulis; floribus majusculis, axillaribus, solitariis, breviter pedunculatis; calyce brevissimo, obtuse 7–8-crenato-lobulato; capsula velutino-puberula, rostrata, bracteas vix superante.

Caulis 1½–2 ped., parce trichotome ramosus. *Folia* 1–1¼ poll. longa, ⅓ poll. lata. *Pedunculi* adscendentes, ⅓–¾ poll. longi; bracteæ (fructiferæ) 1 poll. longæ, capsulam subæquantes. *Corolla* aurantiaco-flava, ut videtur 1½–2 poll. longa. *Capsula* basi dilatata, 4–5 lin. lata.

Hab. East-coast range, alt. 4700 feet, 6° 38′ S. lat. (*T. atriplicifolia*, App. Speke's Journ. 643).

With the habit of *T. atriplicifolia*, E. Mey., it differs in its penniveined leaves.

[From 12 to 20 inches high. Found on the east-coast range at an altitude of 4700 feet, 6° 38′ S. lat., in December. Flowers orange-yellow.—J. A. G.]

Plate CXXIII. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stigma.

3. NELSONIA CAMPESTRIS, R. Br.; Benth. Fl. Austral. iv. 543.—*N. tomentosa*, Dietr. Sp. Plant. i. 419; App. Speke's Journ. 643.

Hab. 7° 25′ S. lat., in waste ground, alt. 1290 feet, *Col. Grant!*

4. BRILLANTAISIA ALATA, T. Anders. MSS. in herb. Kew. Caule erecto, 4-angulato, glabro (v. nodis setosis); foliis ellipticis v. ovato- v. obovato-ellipticis, late acutatis apiculatis v. obtusis, deltoideo-dentatis, basi in petiolum late alatum angustatis; paniculis terminalibus amplis; pedunculis glabris v. puberulis; pedicellis brevissimis; calycis laciniis anguste linearibus, obtusis, glandulosis; corollæ tubo calycem æquante, limbo amplo.

Caulis 6–8-pedalis, inferne cystolithiis dense notatus. *Folia* inferiora ampla, lamina 8–10 poll. longa, 6–7 poll. lata, basi sæpius in petiolum late alatum abrupte angustata; folia superiora minora, glabra v. sparse hirsuta, in sicco cystolithiis notata. *Panicula* ampla, 1–1½ ped. longa; ramulis dichotomis v. superioribus unilateralibus indivisis; bracteæ herbaceæ, ovales v. oblanceolatæ, ⅛–½ poll. longæ. *Calyx* ½ poll. longus. *Corolla* 1¾–2¼ poll. longa, labio inferiore breviter 3-lobato, ¾–1 poll. lato.

Hab. Uganda and Unyoro, Sept. 1862 (*Brillantaisia* no. 1, App. Speke's Journ. 643). *Col. Grant!* Also in West Tropical Africa.

Very nearly allied to *B. owariensis*, P. de Beauv. (Bot. Mag. 4717), which seems to differ chiefly in being more hirsute, in its smaller flowers and bracts, and more narrowly winged petioles.

[A rare plant, with an erect, square stem, 6 to 8 feet high, from 4 to 6 inches in circumference. Uganda and Unyoro (September). Stem much knotted where the leaves are given off. Leaves firm, one to two spans long, with the petiole winged to the base. Flower-branches bent down. The upper lip of the flower is yellow, prettily spotted with lilac; the other, of three teeth, is lilac. A handsome showy plant.—J. A. G.]

Plate CXXIV. fig. 1. Flower; fig. 2. Corolla, laid open.

5. BRILLANTAISIA PUBESCENS, T. Anders. MSS. in hb. Kew. Aromatica: caule erecto, piloso, obtuse 4-angulo; foliis ovato-lanceolatis, acutiusculis, subintegris v. obscure crenato-dentatis, lamina basi in petiolum angustata; panicula ramosissima, terminali glanduloso-pubescente et pilosa; bracteis obovatis rotundatisve, petiolatis; floribus

subsessilibus; calycis laciniis inæqualibus, anguste linearibus, longiore capsulam superante.

Folia superiora 3–4 poll. longa, $\frac{3}{4}$–2 poll. lata; petiolus $\frac{1}{2}$–$\frac{3}{4}$ poll. longus. *Calyx* plus minus pilosus, pilis patentibus, segmento unico cæteris longiore. *Capsula* linearis, mucronata, subglabra, valvis dorso sulcatis.

Hab. 7° 30′ S. lat., alt. 890 feet (*Brillantaisia* no. 2, App. Speke's Journ. 643), *Col. Grant!*

The same species occurs in Zambesi-land.

[An aromatic plant amongst rank vegetation.—J. A. G.]

Plate CXXV. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anther; fig. 4. Ovary; fig. 5. Capsule, after dehiscence.

6. Hygrophila spinosa, T. Anders. in Journ. Linn. Soc. vii. 22.—*Asteracantha longifolia*, Nees, and *A. auriculata*, Nees. *A. macrantha*, Hochst., in hb. Schimp. Abyss. 343 (*fide* T. Anders.); App. Speke's Journ. 643.

Hab. Madi, Mininga, and Unyoro, *Col. Grant!* Also throughout India and the archipelago.

[Found near water and cultivation. Stem erect, purple at the thick joints, hairy, fleshy, and very pithy. One specimen in a village, in December, had stalks 10 feet high, 10 inches in circumference, square and jointed. Six thorns, $1\frac{1}{2}$ inch long, grew in the leaf-axils. Corolla white, also purple. Quantities of this plant are collected and burnt in Unyamezi, where the water from its ashes is evaporated for salt.—J. A. G.]

7. Calophanes trichocalyx, Oliv., sp. nov. Caule erecto, plus minus ramoso; ramis adscendentibus tetragonis pilosulis; foliis ovalibus, acutiusculis, basi in petiolum angustatis, subintegris, supra scabridis hispidulisve, subtus breviter hirsutis; floribus in pseudoverticillis axillaribus densifloris, bracteis brevioribus congestis; calycis profunde 5-fidi lobis subulato-aristatis, hirsutis; corollæ labio superiore 2-fido, lobis rotundato-quadratis, inferiore 3-fido, lobis quadrato-oblongis; capsula glabra, calyce breviore, subtereti, apiculata.

Folia superiora 2–$2\frac{1}{2}$ poll. longa, $\frac{3}{4}$–1 poll. lata; petiolus $\frac{1}{6}$–$\frac{1}{3}$ poll. longus. *Verticillastra* $1\frac{1}{2}$–2 poll. diametro. *Calyx* $\frac{1}{2}$ poll. longus. *Corolla* purpurea, $\frac{3}{4}$ poll. longa. *Antheræ* basi mucronatæ. *Ovarium* glabrum, loculis 2-ovulatis; stylus elongatus, hirsutus.

Hab. Karagué, Feb. 1862 (*Hygrophila* no. 1, App. Speke's Journ. 643), *Col. Grant!*

Apparently nearly allied to *C. verticillaris*, T. Anders. MSS. in herb. Kew, from Zambesi-land.

[An erect-growing plant, generally found by water. Stem square, purple, and covered with rough hairs. Flowers purple, numerous, from the branch- and leaf-axils. After the flowers fall off, the sepals become hard, black, and sharp-pointed, a contrast in colour to the flowers. Seed-vessel two-celled, with four flat scales of seeds.—J. A. G.]

Plate CXXVI. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anthers; fig. 4. Ovary and stigma.

8. Calophanes radicans, T. Anders. in Journ. Linn. Soc. vii. 23; App. Speke's Journ. 643.—*Ruellia radicans*, Hochst., in hb. Schimp. Abyss. 17.

Hab. Karagué, Feb. 1862, *Col. Grant!*

[A creeping plant, and represented as such in an original drawing by me, 8 inches high. Corolla white, small. In February, at Karagué, when laid up with a swollen leg, the brother of the Sultan

recommended me to foment my limb with this and *Alysicarpus Wallichii.* The application was soothing; but no other effect seemed to be produced.—J. A. G.]

9. Ruellia patula ?, Jacq.; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 24; App. Speke's Journ. 643.

I see no reason to doubt the determination; but the single specimen is hardly in a state to feel sure about.

Hab. Madi, Dec. 1862, *Col. Grant!* This species extends eastward through India.

[A bushy plant, 4 inches high. In flower during December at 3° 15′ N. lat.—J. A. G.]

10. Phaylopsis longifolia, Sims; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 26; App. Speke's Journ. 643.—*Ætheilema imbricatum*, Br., hb. Schimp. Abyss. 505 and 1523. *Barleria inæqualis,* Hochst., in hb. Schimp. Abyss. 367.

Hab. Rocky heights of Ugani, Dec. 1862, *Col. Grant!*

[Found in December, growing in shade against the rocks and upon the rocky heights about Madi in 3° 15′ N. lat.—J. A. G.]

11. Barleria acanthoides, Vahl; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 27.—*Barleria* no. 1, App. Speke's Journ. 643.

Hab. Precise locality not given, *Col. Grant!* Extends eastward through Arabia to Scind.

The reticulated rigid bracts are narrower than is usual in the species; but the label is authenticated by Dr. Anderson.

[A spinous diminutive plant. Its locality forgotten; but somewhere near the east coast.—J. A. G.]

12. Barleria Grantii, Oliv., sp. nov. Frutescens, inermis; ramulis obscure tetragonis, glabris, in nodis setulosis; foliis ovatis v. ovato-ellipticis, breviter acute acuminatis, petiolatis, integris, glabrescentibus v. parce præcipue in nervo medio subtus setulosis; floribus axillaribus solitariis binisve subsessilibus, in spicas foliaceas terminales dispositis; bracteolis anguste linearibus; calycis laciniis exterioribus ovatis, inferiore breviter bifida, interioribus brevioribus, lineari-lanceolatis, acuminatis; corollæ lobis rotundatis, antico paulo majore; staminibus longioribus 2, tubo corollæ æquilongis; ovulis solitariis.

Frutescens, ramosa; ramis divaricatis. *Folia* 2 poll. longa, 1–1$\frac{1}{3}$ poll. lata; petiolus $\frac{1}{12}$–$\frac{1}{4}$ poll. longus. *Calyx* lobis exterioribus 6–8 lin. longis, interioribus bracteolisque longioribus. *Corolla* 1–1$\frac{1}{8}$ poll. longa. *Stamina* postica brevissima. *Ovarium* glabrum; ovula in loculis solitaria.

Hab. Nile, about 2° N. lat. (*Ruellia* no. 2, App. Speke's Journ. 643), *Col. Grant!*

The "brown hairs" marking the stem, referred to by Col. Grant, are probably cystoliths imbedded in the epidermal layer; but they are inconspicuous in our specimen. Allied to *B. ruelloides,* T. Anders., of Nigritania.

[This shrubby bush was found on the rocky banks of the Nile, and by the side of a stream in Madi (during December). Branches jointed, purple, streaked and closely marked with brown hairs. Corolla blue. Seed-vessel flat, $\frac{5}{8}$ inch long, with two flat somewhat lozenge-shaped seeds. Speke's factotum "Bombay" told me he had eaten the boiled leaves of this plant at Chongweh, opposite to Zanzibar—J. A. G.]

Plate CXXVII. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anthers; fig. 4. Calyx and pistil; fig. 5. Ovary, vertical section; fig. 6. Same, transverse section.

13. Barleria marginata, Oliv., sp. nov. Caulibus erectis, glabris, e caudice lignoso parce ramosis; ramis adscendentibus; foliis lineari-oblongis, acutis et acute mucronatis, basi angustatis, utrinque glabris nervo medio marginibusque subtus adpresse strigosis

exceptis; floribus capitatis quasi terminalibus, sessilibus, foliis superioribus brevioribus; bracteolis ovato-lanceolatis, rigide mucronatis; calycis laciniis exterioribus ovato-lanceolatis, acutissimis, interioribus anguste lanceolatis; corollæ hypocraterimorphæ lobis obovatis; staminibus 2 longioribus exsertis.

Caulis 1–$1\frac{1}{2}$-pedalis, teretiusculus v. obscure tetragonus. *Folia* 2–$3\frac{1}{2}$ poll. longa, $\frac{1}{3}$–$\frac{1}{2}$ poll. lata. *Corolla* tubo gracili, $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa, limbo $\frac{3}{4}$–1 poll. diam. *Capsula* $\frac{2}{3}$ poll. longa, acuminata, calycem superans v. laciniis exterioribus æquilonga.

Hab. On dry ground, 7° 10′ S. lat. Oct. 1860 (*Barleria* no. 2, App. Speke's Journ. 643), *Col. Grant!*

Plate CXXVIII. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamens; fig. 4. Calyx and pistil; fig. 5. Capsule.

14. Crossandra nilotica, Oliv., sp. nov. Herbacea e basi lignosa; caule decumbente v. adscendente, teretiusculo, pubescente; foliis ovato-lanceolatis, obtusiuscule acuminatis, basi in petiolum angustatis, utrinque scabrulis v. deinde supra glabrescentibus; spicis subteretibus mollibus, sæpius longiuscule pedunculatis; bracteis laxe imbricatis, obovatis v. obovato-ellipticis, late acutatis v. obtusis, mucronatis, membranaceis, 3–5-nerviis, pilosis; corollæ tubo exserto.

Herba pedalis. *Folia* $1\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, $\frac{3}{4}$–$1\frac{1}{2}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{3}{4}$ poll. longus. *Pedunculi* $\frac{3}{4}$–5 poll. longi, interdum brevissimi. *Spicæ* $1\frac{1}{2}$–$2\frac{1}{4}$ poll. longæ, $\frac{3}{4}$–1 poll. diam., pilosæ; bracteæ $\frac{3}{4}$–$\frac{5}{6}$ poll. longæ. *Calyx* lacinia postica binervosa, apice bidentata, $\frac{1}{2}$ poll. longa, laciniis interioribus brevibus lanceolatis acuminatis, acumine piloso. *Corolla* tubo $\frac{3}{4}$ poll. longo, limbo $\frac{3}{4}$–1 poll. diam.

Hab. Usui and Madi (*Crossandra*, sp., App. Speke's Journ. 643), *Col. Grant!*

Resembles *C. infundibuliformis*, Nees, of India, differing at first sight in the broad, membranous, pilose, lax bracts.

[This is a bushy-growing plant, found in patches covering the ground locally, preferring shade and rocky banks of burns. About a foot high, with a round woody rather downy stem. The leaves have waving edges. The flower is pale pink or scarlet-coloured, the lower petal being the largest. The seeds are black and pyramid-shape: they were preserved. Found in flower during December.—J. A. G.]

Plate LXXXV. fig. 1. Flower; fig. 2. Calyx; fig. 3. Corolla-tube, laid open; fig. 4. Anther; fig. 5. Ovary, vertical section; fig. 6. Stigma; fig. 7. Ovule; fig. 8. Capsule; fig. 9. Same, enlarged; fig. 10. Same, laid open; fig. 11. Same, transverse section; fig. 12. Seed.

15. Lepidagathis mollis, T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 33; App. Speke's Journ. 643.

Hab. Madi, Dec. 1862, *Col. Grant!*

Col. Grant's specimen is stouter than the Niger plant described by Dr. Anderson, with larger leaves (5 inches long) and dense verticillasters of about 2 inches diameter.

[Common almost everywhere in our route wherever there was vegetation.—J. A. G.]

16. Blepharis edulis, Pers.; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 36; App. Speke's Journ. 643.

Hab. Desert around Meroë, April 1863, *Col. Grant!* Occurs eastward to Beloochistan.

[This was the only living plant we found in the desert at 16° to 17° N. lat., near the ruins of Meroë, in April, when it was about to seed.—J. A. G.]

17. Acanthus arboreus, Forsk.; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 37.—Var. *pubescens.* Caule obtuse tetragono puberulo; foliis oblongo-lanceolatis, acutis, pinnatifidis, segmentis deltoideis spinosis, supra scabride puberulis, subtus pubescentibus, valide nervosis; bracteis rigidis, ovato-oblongis, trinerviis, pubescentibus, margine et apice spinosis.—App. Speke's Journ. 643. *Cheilopsis polystachya*, Moq., et *C. arborea*, Nees, DC. Prod. xi. 272, 273.

Frutescens 4–20-pedalis. *Folia* 5–6(–12) poll. longa, 1–4 poll. lata, basi cordata; petiolus brevis, ½–1 poll. longus. *Spicæ* 3–6 poll. longæ.

Hab. 2° 41′ S. lat., alt. 4000 feet, *Col. Grant!*

[From 4 to 19 feet high. Have seen a bud of it growing upon a tree. Corolla pink. Seeds three or so, covered with a down which makes the fingers itch.—J. A. G.]

Plate LXXXVI. fig. 1. Flower; fig. 2. Calyx; fig. 3. Anthers; fig. 4. Ovary and disk.

18. Justicia debilis, Vahl; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 43.—Var. *angustifolia.* *Justicia blepharostegia*, E. Mey, hb. Drège; App. Speke's Journ. 643. *Monechma angustifolium*, Nees; DC. Prod. xi. 412. *M. debile*, Nees, *l. c.* 411.

Hab. Karagué, Feb. 1862, *Col. Grant!* Also in Abyssinia and Arabia.

[18 inches to 2 feet high, erect, with rather rough, purplish, four-cornered stem, having swollen joints. The hood of the flower is rose-pink. Seed-vessel splits in two, and contains two, flat, shining, dark blood-stone-coloured seeds. Found in flower at Karagué in February.—J. A. G.]

19. Justicia subsessilis, Oliv., sp. nov. Caule erecto e caudice lignoso, teretiusculo, pubescente; foliis late ovatis v. ovato-rotundatis, late acutatis, basi rotundatis integris subsessilibus, scabride pilosulis; spicis terminalibus obtusis, laxe bracteatis; bracteis anguste ellipticis, bracteolis lanceolatis, acutis, calyce æquilongis, laciniis ejusdem latioribus; calycis laciniis 4 subæqualibus, lineari-lanceolatis, acuminatis, quinta minima; corollæ labio superiore obtuso, integro v. emarginato, inferiore apice breviter 3-lobato, lobis rotundatis.

Caules ⅔–1-pedales, subsimplices. *Folia* 1 poll. longa, 7–10 poll. lata, interdum obtusa, obsolete apiculata. *Spicæ* basi foliis superioribus vaginatæ, 1–2½ poll. longæ; bracteæ glanduloso-puberulæ, ciliatæ, et bracteolæ 5–6 lin. longæ. *Flores* 6–8 lin. longæ.

Hab. Karagué, Dec. 1861 (*Justicia* no. 3, App. Speke's Journ. 643), *Col. Grant*

[A woody bushy plant, growing in tufts, 10 inches in height, all over the Karagué hills. The yellow flowers gradually shade down into the green of the leaves; the lower lip of the corolla has two streaks of lilac passing down the throat. The seed-vessel seems four-celled externally, but contains only two flat seeds, ripe in December.—J. A. G.]

Plate CXXIX. A. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anther.

20. Justicia neglecta, T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 40.—*Justicia* no. 6, App. Speke's Journ. 643. *Adhatoda Rostellaria*, Nees; DC. Prod. xi. 397.

Hab. Unyoro, Aug. and Nov. 1862, *Col. Grant!* Widely spread in Tropical Africa.

[At 2° N. lat. this plant, with its pretty pink flowers, is common in the tall grass next the cultivations. —J. A. G.]

21. Justicia insularis, T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 40.—*Adhatoda diffusa*, Benth. in Fl. Nigrit. 483. An varietas? glabrior, floribus minoribus.

Hab. 7° 30′ S. lat., Oct. 1860 (*Justicia* no. 7, App. Speke's Journ. 643).

22. JUSTICIA MATAMMENSIS, Schweinf. in herb. Gallabat. (sub *Adhatoda*).—*Justicia* no. 4, App. Speke's Journ. 643.

Hab. 5° 50′ S. lat., alt. 4000 feet, *Col. Grant!*

From a stouter stock, and drying a paler yellow-green, than Dr. Schweinfurth's specimens.

[At 5° 50′ S. lat., and 4000 feet alt., we saw the natives collecting this plant and eating it as a spinach; but we did not appreciate it on trial. It is a bushy plant, about 8 inches in height.—J. A. G.]

23. JUSTICIA ANSELLIANA, T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 44.—*Adhatoda Anselliana*, Nees; DC. Prod. xi. 403. Var. *angustifolia*, foliis $\frac{1}{14}$–$\frac{1}{8}$ poll. latis.

Hab. Madi, in swamps, Dec. 1862 (*Justicia* no. 8, App. Speke's Journ. 643), *Col. Grant!*

[Found growing amongst swamp-grass at 3° 15′ N. lat. 10 to 12 inches high. In flower December.—J. A. G.]

24. JUSTICIA UNCINULATA, Oliv., sp. nov. Herba spithamæa e basi lignosa intricata; caulibus ramosis pilosis pubescentibusve; foliis ellipticis v. oblongo-ellipticis, obtusis, petiolatis, pilis paucis patentibus, basin versus ciliatis glabrisve; spicis axillaribus pedunculatis, 4–7-floris; bracteis bracteolisque brevissimis, rigidiusculis, subulatis; calycis profunde 5-fidi laciniis 3 linearibus, attenuatis subæqualibus, 2 lineari-oblongis, mucronatis brevioribus; corollæ labio superiore bidentato, inferiore profunde 3-fido, lobis obovato-oblongis.

Folia $\frac{1}{2}$–$\frac{2}{3}$ poll. longa, $\frac{1}{6}$–$\frac{1}{3}$ poll. lata; petiolus 1–1$\frac{1}{2}$ lin. v. brevior. *Pedunculi* $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, linea pubescente notati. *Bracteæ* lin. longæ. *Corolla* $\frac{1}{3}$ poll. longa. *Capsula* oblongo-clavata, apiculata, lacinias breviores calycis superans.

Hab. East-coast range, 6° 38′ S. lat., alt. 4700 feet (*Justicia* no. 5, App. Speke's Journ. 643), *Col. Grant!*

[A woody scrubby plant with white flowers, found on the summit of the east-coast range of hills at 6° 38′ S. lat. in December.—J. A. G.]

Plate CXXIX. B. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamens; fig. 4. Pistil.

25. SCHWABEA CILIARIS, Nees; T. Anders., Afr. Acanth. in Journ. Linn. Soc. vii. 45; App. Speke's Journ. 643.

Hab. Madi, Dec. 1862, *Col. Grant!*

[A common plant, 18 or more inches in height, growing near low moist ground and rocks at 3° 15′ N. lat.—J. A. G.]

26. DICLIPTERA, an species nova?

Folia superiora oblongo-lanceolata, obtusiuscula, breviter petiolata, utrinque subscabride puberula, 1$\frac{1}{2}$–2 poll. longa. *Flores* in fasciculos axillares umbelliformes breviter pedunculatos v. subsessiles conferti; bracteæ ovales, mucronatæ, pubescentes, calycibus longiores.

Hab. Madi, Dec. 1862 (*D. bupleuroides*, App. Speke's Journ. 644), *Col. Grant!*

Different from *D. bupleuroides*, Nees (=*D. Roxburghii*, Nees, T. Anders., Ind. Acanth. in Journ. Linn. Soc. ix. 519), or a very remarkable variety of the same species.

[Common upon light stony ground at 3° 15′ N. lat. In flower during December. Flowers pink.—J. A. G.]

27. ASYSTASIA SCHIMPERI, T. Anders., in Journ. Linn. Soc. vii. 53.—*Adhatoda rostrata*, Hochst., in hb. Schimp. Abyss. 2220. *A. Rostellaria β. humilis*, Nees, DC. Prod. xi. 397.—*Asystasia rostrata*, Solms, in Schweinf. Fl. Æthiop. 242.

Hab. Unyoro, Oct. 1862 (*Justicia* ? no. 2, App. Speke's Journ. 643), *Col. Grant!*

The species ought to retain the specific name under which it was first referred to the correct genus.

[Root fibrous; stem four-cornered, jointed, and tapering rapidly upwards, here and there purplish, and covered with curved hairs; leaves soft-textured; corolla white, one of its lips larger than the other four; pistil the same length as the longest stamina. The seeds are flat as a lozenge, but bordered by numerous points, and somewhat oval in general outline. Found in rank vegetation at Unyoro in October. —J. A. G.]

SESAMEÆ.

1. SESAMUM INDICUM, L.; App. Speke's Journ. 642.

Hab. Mininga, April 1861, *Col. Grant!* Widely cultivated in the Old-World tropics.

[Cultivated at Mininga, Karagué, Uganda, Unyoro, and Chopeh, where it grows healthily, 3½ feet high. Flowers pale rose-coloured. The seeds are pleasant eaten roasted, and from them the people express an oil. It is called "mafoot'a," or oil-plant.—J. A. G.]

2. SESAMUM INDICUM, L., var. ? *angustifolium.*

Folia $\frac{1}{6}$–$\frac{1}{3}$ poll. lata.

Hab. 5° S. lat. (*Sesamum* no. 4, App. Speke's Journ. 643), *Col. Grant!*

We have apparently the same plant from Mr. Consul Petherick, and also from the Rovuma river, collected by Dr. Meller. It may prove a distinct species.

3. SESAMUM MACRANTHUM, Oliv., sp. nov. Caule erecto, parce ramoso, profunde 4-sulcato, pilosulo, deinde glabrato; foliis suboppositis, ovato- vel oblongo-ellipticis, obtusis, interdum mucronatis, repando-crenatis subintegrisve, brevissime petiolatis, supra obsolete hispidulis glabrescentibus, subtus breviter incano-tomentosis, reticulatis; racemis terminalibus foliaceis, floribus biuncialibus; calycis lobis lanceolatis, acutis; corollæ tubo basi obtuse gibboso; ovario pubescente.

Caulis 6–8-pedalis. *Folia* superiora 2–3 poll. longa, 1–1½ poll. lata; petiolus $\frac{1}{12}$–$\frac{1}{4}$ poll. v. folia subsessilia. *Pedicelli* 1–2 lin. longi. *Calyx* lobis 5–6 lin. longis, $\frac{1}{8}$ poll. latis. *Corolla* infundibulari-campanulata, limbi 1½–2 poll. diam. lobis obtusis. *Fructus* maturus . . . . .

Hab. 5° S. lat., alt. 3800 feet (*Sesamum* no. 2, App. Speke's Journ. 642), *Col. Grant!*

[This was common in moist places at 5° and 2° 41′ S. lat., altitude 3000 to 4000 feet. Growing like the foxglove, and attaining a height of 8 feet in rank vegetation.—J. A. G.]

Plate LXXXIV. fig. 1. Base of corolla-tube and stamens; fig. 2. Anther; fig. 3. Pistil. Mr. Fitch has represented all the leaves as mucronate. In one of our specimens they are as figured; in two others the mucro is nearly or quite wanting.

4. SESAMUM MACRANTHUM, Oliv., var. ? *angustifolium.* A plant similar to the last as to large flowers, and calyx-segments broader than in *S. indicum*, but with narrowly oblong obtuse leaves. The capsules resemble those of *S. indicum*; but the calyx is not persistent, and the disk of the seeds is minutely tubercled or radially cor-

rugated, and the margin with very narrow double edges connected by transverse bars.

Hab. 6° 55′ S. lat., 38°–39° E. long. (*Sesamum* no. 3, App. Speke's Journ. 643), *Col. Grant!*

We have apparently the same plant from Lake Nyassa, collected by Dr. Kirk.

[A stunted-like plant, 18 inches high, with pink flowers (October), in the open dry forests at 6° 55′ S. lat., alt. 3800 feet.—J. A. G.]

Selagineæ.

1. Hebenstreitia dentata, L., var. *integrifolia*, DC. Prod. xii. 4.

Hab. East-coast range, 6° 38′ S. lat., alt. 4700 feet (App. Speke's Journ. 643).

[A hardy, heath-like, woody plant, collected in December on the east-coast range at an altitude of 4700 feet, 6° 38′ S. lat.—J. A. G.]

Verbenaceæ.

1. Lippia adoensis, Hochst., DC. Prod. xi. 578. Var. foliis quaternis, oblanceolatis, asperrimis; bracteis squarrosis, acutis.

Hab. Near cultivated ground, 2° N. lat. (*Lippia* no. 2, App. Speke's Journ. 644), *Col. Grant!*

Of *Lippia* no. 1, App. Speke's Journ., no specimen was gathered. Col. Grant describes it as follows:—

[Stem erect, woody, six-sided, grooved, and angular, purplish. Leaves in a whorl, 2 inches by 1 inch, lanceolate, with little or no stalk, serrate; surfaces rough as a file. Inflorescence in a cylindrical head growing from leaf-axils; calyx diminutive, hairy; corolla yellow, deciduous, of four unequal divisions. Found flowering at Karagué in February—J. A. G.]

2. Lantana, sp. (App. Speke's Journ. 644), determined generically from Col. Grant's figure and notes, collected at Karagué in Dec. 1861, with rose-coloured flowers and deep-purple berries of juniper-flavour, I have not seen.

3. Premna, sp. (App. Speke's Journ. 644). Possibly allied to *P. senensis*, Kl., in Peters's Mossamb. Bot. 263, but with glabrescent leaves, not in a state for description.

Hab. 5° 5′ S. lat., 32°–33° E. long., alt. 3900 feet, 1860, *Col. Grant!*

4. Clerodendron cordifolium, A. Rich., Fl. Abyss. ii. 170; App. Speke's Journ. 644.

Hab. Unyoro, Sept., and Madi, Dec. 1862, *Col. Grant!*

[Found in flower during September in Unyoro, and again in Madi (December), where it was climbing up trees and round village-fences. Stem tough, and four angles just observable. The flower-stalks of one variety do not grow from the leaf-axils, but above them. The leaves are of a deep green colour, glossy, with their ribs prominent behind. Calyx at first green; but when the seed begins to form, it becomes deep purple. The white petals are pink inside at their bases. Pistil shorter than the long stamina. The seed-vessel (four-celled) is frequently eaten away, but is generally covered for half its length with a black shining dust, and the other half has a more solid and orange-yellow dust. Seeds preserved.—J. A. G.]

5. Clerodendron rotundifolium, Oliv., sp. nov. Frutex, hispidulo-velutinus;

ramulis ultimis teretibus, fulvo-pubescentibus; foliis petiolatis, rotundatis, breviter apiculatis, basi truncatis v. late cuneatis, lateribus late crenatis, supra hispidulo-pubescentibus, subtus præcipue in nervis venulisque reticulatis hirsutis; cymis pedunculatis velutino-pubescentibus in paniculas terminales dispositis; calycis laciniis ovatis, acuminatis, tubo turbinato; corollæ tubo 2½ poll. longo, gracili, pilosulo, filamentis exsertis.

Folia 2½–3 poll. longa, 2–3 poll. lata; petiolus ¾–1 poll. longus. *Bracteæ* lineares, acuminatæ, pubescentes. *Calyx* ½–¾ poll. longus, laciniis ⅓ poll. longis. *Corollæ* limbi laciniæ obovatæ v. oblongæ.

Hab. Karagué, 1862 (*Clerodendron* no. 2, App. Speke's Journ. 644).

[A shrub not above 2 feet high. Its branches are pithy and covered with velvet-like down; young shoots have a rich purple-velvet colour. Leaves 3 by 3 inches; between round and rhomboid in shape, they grow irregularly upon the stem, and have crenate edges; their texture is soft, and colour deep green. Calyx of five deeply divided, equal, green sepals, much broader than the white corolla, which is six times the length of the calyx. The pistil is longer than the stamina; and all extend beyond the flower. Its straight branches being very pithy, are used by the natives as sucking-tubes, or "meereeja," in the same way as we use straws when taking American drinks. Found in flower at Karagué in March 1862.—J. A. G.]

Plate LXXXIX. fig. 1. Calyx and pistil; fig. 2. Ovary; fig. 3. Anther; fig. 4. Transverse section of ovary; fig. 5. Stigma.

6. Cyclonema myricoides, Hochst., DC. Prod. xi. 675. Var. foliis verticillatis, 3–4-pollicaribus, cuneato-ellipticis v. ovato-lanceolatis, acutis, margine integris v. supra medium paucidentato-serratis, pagina superiore scabrula v. glabrata, inferiore fulvo-pubescente.

Hab. Usui, Nov. 1861 (*Cyclonema*, sp., App. Speke's Journ. 644), *Col. Grant!*.

I should scarcely have ventured to refer these specimens to the Abyssinian species were it not that a form as divergent from the type, but glabrous and with opposite leaves, had been so referred by Dr. Schweinfurth (*C. myricoides*, var. *glabrata*, Schweinf. in hb. Matamma).

[This is common on waste ground at 2° 41′ S. lat., where it was flowering in November. The flowers are of a light purple colour; and the berry is black.—J. A. G.]

7. Vitex simplicifolia, Oliv., sp. nov. Ramis teretiusculis v. obtuse tetragonis, glabrescentibus, novellis pilosulis; foliis sæpius simplicibus, ternatim verticillatis, longiuscule petiolatis, late ellipticis, breviter apiculatis, distanter crenato-dentatis, coriaceis, supra glabrescentibus, subtus pubescenti-hirtellis, reticulatis; pedunculis axillaribus gracilibus, petiolo subæquilongis; cymis paucifloris; calyce fructifero late dentato; fructu obovoideo v. ellipsoideo, obtuso, glabro.

Frutex. Folia 4–7 poll. longa, 2½–4½ poll. lata, petiolus 2–2½ poll. longus. *Calyx* fructifer ½ poll. latus, pilosulus. *Fructus* (in sicco) ⅝–¾ poll. longus.

Hab. Madi, Feb. 1863 (*Vitex* no. 1, App. Speke's Journ. 644), *Col. Grant!*

To the same species I refer specimens collected in Musgu, Central Africa, by E. Vogel, with leaves tawny pubescent-tomentose beneath. I have not seen flowers.

[This shrub has a rich perfume about it. Fruits in February at 3° 15′ N. lat. Leaves single, stalked, say 6 by 4 inches, in whorls of threes. Fruit is a plum, shaped like a date, but half its size; smooth skin, now green, but yellow when ripe; its taste is rather acrid. Only met with here, and called the genuine "m'thalassee" (or *Vitex*), which, the natives tell me, never attains the size of a tree.—J. A. G.]

Plate CXXX. fig. 1. Fruit and persistent calyx; fig. 2. Longitudinal, and fig. 3. Transverse section of fruit.

8. VITEX CIENKOWSKII?, Kotschy et Peyritsch, Pl. Tinn. no. 42, tab. 12.

Col. Grant's specimen consists of a leafy branch only, so that I cannot be sure of the species.

Hab. Abundant at Madi, Dec. 1862 (*Vitex* no. 3, App. Speke's Journ. 644).

[A tree with silver-grey bark; outline handsome and umbrageous. Leaves of five deep-green leaflets, each, when full-grown, pear-shape; corolla pink. Fruit date-size, lustrous and black like a damson, quite smooth, and the skin peels off easily. Pulp a soft substance, gingerbread-colour, sweet and pleasant, but adhering much to the stone. The stone has four indistinct divisions from base to tip. The tree was met with in several latitudes, wherever there was rich meadow-land. It fruits at various times: in August it has been seen in flower, while another tree was in fruit in June. The natives all know it by the name of "m'foo" or "m'foolo," and make drums of its light brittle wood.—J. A. G.]

9. VITEX MADIENSIS, Oliv., sp. nov. Arbor; ramis tetragonis, puberulis; foliis trifoliolatis, foliolis obovato-oblongis, obtusis v. obtuse apiculatis, margine utrinque apicem versus grosse 3–4-dentato-serratis, supra scabrulis, subtus minute scabrido-hirtellis, nervo medio venisque primariis conspicuis, foliolis lateralibus breviter, centrali longiuscule petiolulatis; pedunculis axillaribus folio brevioribus, apice dichotome cymosis; bracteis anguste linearibus; pedicellis sæpius calyce brevioribus; calyce hirsuto, acute 5-lobato, lobis ovato-deltoideis, inæqualibus; corollæ labio inferiore lacinia centrali cæteris majore rotundata, basi intus piloso; staminibus vix v. breviter exsertis.

Folia opposita; petiolus puberulus, 3–4½ poll. longus; foliola centralia 4–5½ poll. longa, basi cuneata, petiolulo ¾–1 poll. longo; foliola lateralia breviora, basi oblique rotundata, petiolulo brevissimo. *Pedunculi* 4½–6 poll. longi. *Cymæ* hirtellæ, multifloræ, 2 poll. latæ, internodiis ⅓–½ poll. longis v. ultimis brevibus. *Calyx* campanulatus, hirsutus. *Corolla* brevis, ⅓ poll. longa, limbo extus hirto. *Antheræ* connectivo dorso incrassato.

Hab. Madi, Dec. 1862 (*Vitex* no. 2, App. Speke's Journ. 644), *Col. Grant!*

[A tree, 4 to 5 feet in circumference of the trunk. The bark and branches red; wood very brittle. Ugani (December). Three leaflets; the largest, in the middle, is 4 by 5 inches, with teeth ending each of the largest ribs; they have a rich mango perfume about them. Calyx of a purple-green colour; so also are the tips of all the branches coloured a purple-brown. Fruit one-stoned, 1 inch long, red or yellow, neither black nor sweet-tasted like another species of *Vitex*, but sharp-tasted like the tamarind. Called "m'thalassee" and "m'keendeembee," &c.—J. A. G.]

Plate CXXXI. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Stamens; fig. 4. Pistil.

LABIATÆ.

1. OCYMUM CANUM, Sims; DC. Prod. xii. 32; App. Speke's Journ. 644.

Hab. Unyoro, Aug. 1862, *Col. Grant!* A common tropical weed.

[9 to 12 inches high, with straight long root. In flower August, near cultivation, at 2° N. lat. The "toolsie" of India.—J. A. G.]

2. OCYMUM AFFINE, Hochst.; DC. Prod. xii. 36.—*Æolanthus* no. 1, App. Speke's Journ. 644.

Hab. 6° S. lat., alt. 4000 feet, *Col. Grant!* Also in Abyssinia.

[A showy plant, with long roots. Found at Simbah, 6° S. lat., altitude 4000 feet, growing in the forest where the soil was dry. Flowers in December.—J. A. G.]

3. Acrocephalus cylindraceus, Oliv., sp. nov. Caule erecto, tetragono, sulcato, hispidulo; ramis oppositis, ascendentibus; foliis petiolatis ovalibus lanceolatisve, acutiusculis, basi angustatis, denticulato-crenatis, utrinque parce pilosulis; capitulis oblongo-cylindraceis, sessilibus, basi bracteis 2–4 herbaceis, lanceolatis v. ovato-lanceolatis, patentibus involucratis; bracteis floriferis submembranaceis, late obovato- v. rhomboideo-cuneatis; calyce 2-labiato, labiis integris, obtusis, labio antico breviore; corollæ tubo calycem paulo superante.

Herba tripedalis *A. villoso*, Benth., affinis. *Folia* $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, $\frac{1}{3}$–$\frac{2}{3}$ poll. lata; petiolus $\frac{1}{6}$–$\frac{1}{3}$-poll. *Capitula* centralia $\frac{2}{3}$–$\frac{5}{6}$ poll. longa, 5 lin. lata; foliis involucrantibus $\frac{1}{3}$–1 poll. longis. *Bracteæ* paucifloræ, calycem fructiferum æquantes, dorso dense pilosæ, obtusæ v. late apiculatæ. *Flores* $\frac{1}{5}$ poll. longi, brevissime pedicellati. *Calyx* laxe villosus, fructifer $\frac{1}{6}$ poll. longus, labiis oblongis, obtusis, labio antico enervio breviore integro, dorso apice hirsuto.

Hab. Unyoro, Oct. 1862. Beds of the plant growing by the huts of the natives (*Acrocephalus villosus*, App. Speke's Journ. 644), *Col. Grant!*

[A tough hardy plant, 3 feet high, with a fibrous root. Stem square, an inch thick, covered with rough black hairs; branches numerous, opposite. The plant blooms profusely; and its flowers are frequented by the common honey-bee in September. The corolla closes upon the three elongated seed-like nuts, which adhere by their ends.—J. A. G.]

Plate CXXXII. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Calyx.

4. Acrocephalus cæruleus, Oliv., sp. nov. Frutescens 3–4-pedalis; caule tetragono, appresse hirsuto; foliis linearibus v. lineari-ovalibus, utrinque angustatis, acutis, denticulato-serrulatis, appresse hirsutis, subsessilibus v. petiolo alato; capitulis subglobosis, sessilibus, corymboso-cymosis; bracteis involucrantibus paucis coloratis, late ovatis rhomboideisve, basi cuneatim angustatis patentibus, bracteis floriferis calyce fructifero brevioribus, obovato-rotundatis, breviter apiculatis; calycis lobo antico breviore emarginato; corollæ tubo calyce triplo longiore, labiis subæqualibus.

Folia 2–3 poll. longa, $\frac{1}{4}$–$\frac{1}{3}$ poll. lata. *Bracteæ* coloratæ, $\frac{1}{2}$–1 poll. longæ, pallide lilacinæ, viride venosæ. *Capitula* $\frac{1}{3}$–$\frac{1}{2}$ poll. diam.; bracteis floriferis pilosis. *Flores* $\frac{1}{4}$–$\frac{1}{3}$ poll. longi. *Calyx* villosus, 2-labiatus, fructiferus labiis subæqualibus, labio antico emarginato, postico integro. *Corolla* labio postico 3-lobato, lobo centrali obtuso, bidentato.

Hab. Ukidi, growing in patches in low light soil by water. Salt is said to be extracted from the ashes. Nov. 1862 (*Acrocephalus* no. 3), *Col. Grant!*

[Stem erect, woody, four-grooved, feeling rough and mouldy. Branches decussate, growing like an umbel. The broad bracts are all white except their veins, which are green. Flowers blue. Grows in patches. The Wahiow, who are said to extract salt from its ashes, call it "keesongeh."—J. A. G.]

Plate CXXXIII. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Calyx.

5. Acrocephalus lilacinus, Oliv., sp. nov. Pubescens; caule obtuse tetragono, pilis brevibus patentibus piloso-tomentoso, ramoso, ramis adscendentibus; foliis lineari-lanceolatis ovalibusve, acutis, utrinque angustatis, denticulatis, supra scabrulis, subtus plus minus pilosulis patentibus recurvisve; capitulis globosis, bracteis coloratis involucratis; calycis lobo postico 3–4-denticulato, antico 2-denticulato; corollæ tubo calycem fere duplo superante; labiis subæqualibus.

Caulis $1\frac{1}{2}$–$2\frac{1}{2}$-pedalis. *Folia* 1–$1\frac{1}{2}$ poll. longa, $\frac{1}{6}$–$\frac{1}{4}$ poll. lata, breviter petiolata. *Capitula* $\frac{1}{2}$ poll. diam.; bracteæ involucrantes late dilatatæ, apiculatæ, basi cuneatæ, lilacinæ, subtus basin versus pilosæ, $\frac{1}{2}$–$\frac{3}{4}$ poll.

longæ. *Bracteæ* floriferæ rotundato-cuneatæ, apiculatæ, calycem fructiferum subæquantes. *Corolla* labio postico 3-lobato, lobo centrali obtuse bidentato.

Hab. 2° 41′ S. lat. (*Acrocephalus* no. 2, App. Speke's Journ. 644), *Col. Grant!*

[A hard, woody, slightly scented plant of umbel-like growth, with lilac flowers and rather large lilac bracts which have green veins. The flowers are massed together in the form of a button. Flowers during November.—J. A. G.]

Plate CXXXIV. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Calyx.

6. Moschosma polystachyum, Benth.; DC. Prod. xii. 48; App. Speke's Journ. 644.

Hab. By the Nile, 5° 10′ N. lat., Feb. 1863, *Col. Grant!* Widely diffused in the Old-World tropics.

7. Plectranthus ovatifolius, Oliv., sp. nov. Frutescens; caule erecto, subtetragono, ferrugineo-pilosulo, ramis adscendentibus; foliis petiolatis, ovatis, acutis, serratis v. crenato-serratis, basi rotundatis v. late cuneatis, integris, obsolete scabrido-puberulis, subtus tomentellis, verticillastris sæpius 4-floris in racemos terminales paniculatos dispositis; bracteis late ovatis, apiculatis, deciduis, pedicellos vix æquantibus; calyce fructifero declinato, lobo postico late rotundato, apiculato, reticulato, lobis lateralibus late breviterque ovatis, acute cuspidatis, anticis e basi dilatata subulatis quam laterales longioribus; corollæ tubo calycem subæquante, labio antico orbiculato, parvo, labio superiore brevi, lobo centrali obtuso, recurvo, lobis lateralibus obsoletis.

Folia 1–1½ poll. longa, ¾–1 poll. lata; petiolus ¼–⅓ poll. longus. *Panicula* pubescens; racemis simplicibus v. basi cymulis paucis breviter pedunculatis auctis; pedicelli ⅙–¼ poll. longi. *Calyx* fructifer 4–5 lin. longus, basi obtusus, florifer ⅙ poll. longus. *Corolla* ¼–⅓ poll. longa.

Hab. Madi, Dec. 1862 (*Plectranthus* no. 3, App. Speke's Journ. 644), *Col. Grant!*

[Found in one particular place, growing on the flat ground near Madi burn in December, when it was in flower.—J. A. G.]

Plate CXXXV. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Fruit-calyx.

8. Plectranthus stachyoides, Oliv., sp. nov. Caule erecto, 3–4-pedali, teretiusculo, striguloso-pilosulo; foliis breviter petiolatis, ovatis v. ovato-ellipticis, obtusiusculis, deltoideo-dentatis, hirsutis, basi rotundatis, in petiolum brevissimum alatum angustatis; inflorescentia dense spicata; spicis subcylindraceis, erectis, paniculatis, bracteatis, villosis; floribus sessilibus v. subsessilibus, villosissimis; bracteis late ellipticis rotundatisve apiculatis; calycis dentibus acutis, dente postico ovato, cæteris ovato-lanceolatis brevioribus; corollæ labio postico breviter obtuse 4-lobato, antico cymbiformi brevi; staminibus brevissime exsertis.

Folia 2–3 poll. longa, 1¾–2 poll. lata. *Spicæ* terminales 5–8 poll., laterales 2–3 poll. longæ, ¾–1 poll. diam. *Bracteæ* semipollicares. *Flores* ¼–⅓ poll. longæ, villosæ; corolla tubo basi supra convexo.

Hab. Madi, Dec. 1862 (*Hyptis*? no. 4, App. Speke's Journ. 645), *Col. Grant!*

[Four feet high. Frequent in the dry woods of Madi in December. Root deep in the ground. Stem rough, pale brown, round, erect, and covered with long heads of flowers. The whole plant has peppermint-perfume. Leaves not numerous on the stem, covered, as well as the shovel-shaped bracts, with a yellowish soft hair. Calyx of five sepals. Corolla yellow. The calyx closes over the four seed-like nuts, which are shiny, the size of a pin's head, and the shape of a convex lens.—J. A. G.]

Plate LXXXI. fig. 1. Flower; fig. 2. Calyx, laid open; fig. 3. Corolla; fig. 4. Stamen; fig. 5. Ovary.

9. PLECTRANTHUS ?, sp. (no. 1, App. Speke's Journ. 644). Indeterminable, the flowers having all fallen from our specimen.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[A square-stemmed erect plant, branching chiefly from the root, which is long and tortuous. Found in the ravines of Karagué during December when in flower. Calyx diminutive; but it seems to increase in size while the seeds are developing. The flower is white, spotted with pink.—J. A. G.]

10. COLEUS BARBATUS, Benth.; DC. Prod. xii. 71; App. Speke's Journ. 644. *Var.* racemis glandulosis, parce pilosis. May prove a distinct species.

Hab. Mininga, Apr. 1861, *Col. Grant!* Also in Abyssinia and India.

[Gathered at Mininga in April, where it grew amongst hedges of *Euphorbia* with a *Rumex* and grass round about. The whole plant smells richly of guava; and the natives consider it an immediate cure for fever; they cover themselves over and inhale the smoke from its burning leaves. Four feet high, erect, the blue herbaceous stem with white hairs. Leaves large, hairy, and rough, with crenate edges. Flowers blue. —J. A. G.]

11. COLEUS LANUGINOSUS, Hochst.; DC. Prod. xii. 79.

Hab. Unyoro, Oct. 1862 (*Coleus* no. 2, App. Speke's Journ. 644), *Col. Grant!* Also an Abyssinian species.

[Plant 18 inches high, having a heavy odour, found by the cultivated lands of Unyoro in October. Stem somewhat fleshy, erect, and coarsely haired; root tapering and fibred. After the purple corolla has fallen, the calyx closes on the four pearly seed-like nuts.—J. A. G.]

12. COLEUS LATIFOLIUS, Hochst.; DC. Prod. xii. 74.

Hab. Madi, Dec. 1862 (*Plectranthus* no. 4, App. Speke's Journ. 644), *Col. Grant!*

[This grows at 3° N. lat. in the crevices and on the tops of granite boulders wherever there is moisture. Flowers in December.—J. A. G.]

13. ÆOLANTHUS HELIOTROPIOIDES, Oliv., sp. nov. Bi- v. tripedalis; caule ramoso tetragono, pilosulo; ramis sæpe alternis adscendentibus; foliis sessilibus ovali-oblongis, obtusis, denticulatis, parce pilosulis glabratisve; cymis unilateralibus spicæformibus, paniculatis, terminalibus, striguloso-pubescentibus; bracteis brevibus ovato- vel obovato-oblongis; floribus sessilibus; calyce brevissimo truncato; corollæ labiis subæqualibus, labio postico rotundato, 4-lobulato, lobulis rotundatis, labio antico integro, tubo limbo duplo longiore.

Folia $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, 5–7 lin. lata, membranacea. *Flores* parvi, $\frac{1}{4}$–$\frac{1}{3}$ poll. longi. *Bracteæ* circiter lineam longæ.

Hab. Rocks in the forest of Unyoro (*Æolanthus* no. 4, App. Speke's Journ. 645), *Col. Grant!*

[This scented plant was collected in 3-feet-long grass which grew on the bare red surface-rocks about Unyoro forest in August. It is similar in some respects to the following (*Æ. repens*). Flowers lilac.—J. A. G.]

Plate LXXXII. fig. 1. Flower and bracteole; fig. 2. Calyx; fig. 3. Corolla, laid open; fig. 4. Stamen; fig. 5. Ovary; fig. 6. Nuts, and calyx laid open.

14. ÆOLANTHUS REPENS, Oliv., sp. nov. E basi lignosa radicante ascendens subincano-pubescens; caule obtuse tetragono, pilis brevibus plus minus deflexis pubescente;

foliis carnosulis, oblongis v. ovali-oblongis, obtusis, integris v. obsolete denticulatis, utrinque crispe pubescentibus; paniculis terminalibus folia superantibus; cymis pedunculatis, oppositis, simplicibus v. 2–3-furcatis; floribus unilateralibus, sessilibus; bracteis parvis, coloratis, pilosis; calyce brevissimo truncato; corollæ labio superiore rotundato, 4-crenato-lobulato, labio antico longiore cymbiformi.

Caulis ascendens ½–1-pedalis. *Folia* ½–⅔ poll. longa, ⅙ poll. lata. *Bracteæ* obtusæ, lineam longæ. *Corolla* ⅓ poll. longa.

Hab. Karagué, Nov. 1861 and Mar. 1862 (*Æolanthus* no. 2, App. Speke's Journ. 644), *Col. Grant!*

[This plant creeps on the ground or on rocks and roots from its stems. Its leaves are fleshy and sprinkled with short hairs underneath. The flowers grow on one side of the stem with double bracts, of which the largest has a purple gland on its under surface; calyx diminutive and purple, while the corolla is lilac. —J. A. G.]

Plate CXXXVI. A. fig. 1. Flower and bract; fig. 2. Corolla, laid open; fig. 3. Anthers; fig. 4. Pistil.

15. Æolanthus ambustus, Oliv., sp. nov. Erectus, ramosus, pedalis; caule tetragono minute puberulo; foliis linearibus v. anguste ovalibus, apice angustatis, obtusiusculis, carnosulis, glabris, sessilibus; cymis spicæformibus axillaribus terminalibusque; bracteis lanceolatis, obtusis, puberulis, erectis; floribus sessilibus; calyce cylindraceo, ore breviter bilabiato, labio antico 2-lobulato, basi persistente margine obtuse undulato crustaceo; corollæ labio postico leviter 4-lobulato.

Folia ⅔–1¼ poll. longa, 1–2 lin. lata, margine (in sicco) sæpe revoluta. *Cymæ* ultimæ spicæformes, 1–2 poll. longæ; bracteæ ¼ poll. longæ. *Calyx* lineam longus, basi persistente marcescente 1–1½ lin. lata. *Corolla* ⅓ poll. longa, labio antico postico longiore.

Hab. Rocks, Madi, looking as though scorched with fire (*Æolanthus* no. 3, App. Speke's Journ. 645), *Col. Grant!*

Plate CXXXVI. B. fig. 1. Flower; fig. 2. Corolla, laid open; fig. 3. Anthers; fig. 4. Calyx and bract; fig. 5. Persistent base of calyx.

16. Pycnostachys reticulata, Benth.; DC. Prod. xii. 83. *Var.* bracteis acutis, ante florescentiam erectis.

Hab. Ukidi, Nov. 1862 (*Pycnostachys* no. 1, App. Speke's Journ. 644), *Col. Grant!* A Cape species.

[In crossing the rolling grassy country at Ukidi at 2½° N. lat. the dips of ground were often swampy. Here I collected this plant at an altitude of 4000 feet; not common.—J. A. G.]

17. Pycnostachys, sp. (no. 2, App. Speke's Journ. 644). With narrow, compact, cylindrical spikes of fruiting calyces, and calyx-teeth scarcely a line in length. Not determinable.

Hab. By the Nile, about 2° N. lat., amongst rushes, Nov. 1862, *Col. Grant!*

18. Hyptis spicigera, Lam.; DC. Prod. xii. 87; App. Speke's Journ. 645.

Hab. 3° N. lat., Dec. 1862, *Col. Grant!* Widely spread in the tropics.

[This is the "neeno" of Gani, 3° N. lat., where it is cultivated for its small seeds (preserved), which are eaten roasted, and from which oil is extracted; the seeds or seed-like nuts are both black and red, and the whole plant smells strongly. The head of flowers, when ripe, is of a dull purple-grey colour.—J. A. G.]

19. Hyptis brevipes, Poit.; DC. Prod. xii. 107; App. Speke's Journ. 645.

Hab. Madi, Dec. 1862, *Col. Grant!* Another widely spread tropical weed.

[The florets are massed together into the form of a ball. Found in the low grounds of 3° 15′ N. lat. in December.—J. A. G.]

20. Hyptis pectinata, Poit.; DC. Prod. xii. 127; App. Speke's Journ. 645.

Hab. Zungomero and Madi, *Col. Grant!* Again a common tropical weed.

[A weedy plant 4 feet high, found in several localities in waste ground near huts. One variety collected on the banks of the river at Zungomero, $7\frac{1}{4}$° S. lat., was slightly scented.—J. A. G.]

21. Leucas martinicensis, Br.; DC. Prod. xii. 533; App. Speke's Journ. 645.

Hab. Mininga, 4° 18′ S. lat., Apr. 1861, *Col. Grant!*

22. Leucas calostachys, Oliv., sp. nov. Bi- v. tripedalis, villosa; caule erecto e basi lignosa; ramis ascendentibus; foliis brevissime petiolatis, ovato-oblongis ellipticisve vel interdum rotundato-ellipticis, obtusis, apicem versus dentibus utrinque 4–5 crenato-serratis, supra appresse hirsutis, subtus molliter piloso-tomentosis, basi subtriplinerviis; verticillastris in spicas densas bracteatas terminales congestis; calycis 10-dentati labio inferiore 3-dentato producto.

Caulis 1–3-pedalis, obtuse tetragonus, villoso-hirsutus. *Folia* $1\frac{1}{4}$–2 poll. longa, interdum minora et fere rotundata. *Spicæ* 1–4 poll. longæ, 1–$1\frac{1}{4}$ poll. diam.; flores $\frac{3}{8}$ poll. longæ, breviter pedicellati; bracteolæ aciculares, calyce breviores. *Calyx* 10-dentatus, dentibus 7 posticis lateralibusque minoribus, dentibus 3 anticis in labio breviter productis; fructiferus 4–5 lin. longus. *Corolla* tubo calycem æquante intus anguste setoso-annulato, labio postico galeato, emarginato vel retuso, dense hirsuto; labio antico 3-lobato, lobis lateralibus minoribus emarginatis, lobo centrali bifido.

Hab. Karagué, Feb. 1862 (*Leucas* no. 2, App. Speke's Journ. 645), *Col. Grant!*

[2 to 3 feet high, with a square erect stem, the whole plant covered with soft white hair. Flowers white; the hood of the corolla is thickly downy. Found near a stream in Karagué (February), and again near moisture, on the "downs" of Ugani, in November.—J. A. G.]

Plate LXXXIII. figs. 1 and 2. Flower, side and front view; fig. 3. Calyx; fig. 4. Corolla, laid open; fig. 5. Stamen; fig. 6. Ovary and disk.

23. Leonotis, sp., App. Speke's Journ. 645.

Hab. 4° S. lat. to 2° N. lat., *Col. Grant!* I have not seen a specimen.

[Stem deeply four-grooved. Leaves 3 by $2\frac{1}{2}$ inches, stalked, somewhat heart-shaped, with numerous crenatures.—J. A. G.]

24. Tinnea æthiopica, Kotschy and Peyritsch, Pl. Tinn. tab. xi.; Bot. Mag. 5637.

Hab. Unyoro, Aug. 1862, and Madi, Dec. 1862 (*Labiatarum* gen. nov., App. Speke's Journ. 645), *Col. Grant!* Apparently with a wide distribution in Tropical Africa.

[4 to 6 feet high, a woody, straight, slim, branching, but bushy shrub, first found in Unyoro during August, and again 18th December, 1862, near Madi burn, 3° 15′ N. lat. Leaves ovate, single, opposite, with entire edges. Flowers purple; a loose calyx of two segments encloses four flat seed-like nuts, each of which is feathered white round the edges in a beautiful manner; the seeds are rather pear-shaped.—J. A. G.]

PHYTOLACCACEÆ.

1. PHYTOLACCA ABYSSINICA, Hoffm.; App. Speke's Journ. 646.—*Pircunia abyssinica*, Moq.; DC. Prod. xiii. pt. 2, 30.

Hab. Karagué, Dec. 1861, *Col. Grant!*

Flowers in bud only in our specimen. Cited also from Madagascar and the Cape.

[A low-growing bush, found on the hills of Karagué. Bark mouldy green; leaves deep green, with smooth surfaces; berries scarlet, and placed thickly; seed-vessel five-celled, with a seed and colouring-matter in each cell; the colour stains the fingers gamboge.—J. A. G.]

CHENOPODIACEÆ.

1. CHENOPODIUM ALBUM, L.; DC. Prod. xiii. pt. 2, 70; App. Speke's Journ. 645.

Hab. Unyoro, Nov. 1862, *Col. Grant!* A cosmopolitan weed.

[This was found in dense vegetation on fallow ground overlooking the river, in November, at 2° N. lat. Stem woody, distinctly five-sided, streaked a blood-red, erect, and scantily branched.—J. A. G.]

2. CHENOPODIUM BOTRYS, L.; DC. Prod. xiii. pt. 2, 75; App. Speke's Journ. 646.

Hab. Karagué, March 1862, *Col. Grant!* Another cosmopolitan weed.

[This is a handsome plant at all times; but in autumn it is particularly so, becoming a perfect foliage-plant for introduction into our gardens. It then assumes a bright red autumnal colour, and makes a pleasing effect amongst other foliages. It attains 6 feet; has an erect, rather angular, woody stem. Leaves 3 by 1 inch, with irregular edges and hairy surface. Flowers minute, green, of five equal parts. Seed-like fruits flat, circular, little larger than pin-heads, brown, shining; there seems but one to each perianth. The whole plant has a medicinal odour; and the natives apply its mashed leaves and flowers to heat-spots.—J. A. G.]

AMARANTACEÆ.

1. CELOSIA ARGENTEA, L.; DC. Prod. xiii. pt. 2, 242; App. Speke's Journ. 646.

Hab. Uganda, July 1862, *Col. Grant!* Widely spread in the tropics.

[This 6-feet high plant was in flower and seed near cultivation at 2° N. lat. in August. Its stem is smooth, but angular, erect, and woody. Flowers salmon-colour, tending to pink; after the anthers burst, the covered cup containing the seeds becomes surrounded by the perianth in which the stamina rested. The six seeds at the base of the cup are red, flat, and shining. The stem of the season falls down, and other plants of it spring up.—J. A. G.]

2. CELOSIA TRIGYNA, L.; DC. Prod. xiii. pt. 2, 240; App. Speke's Journ. 646.—*C. intermedia*, Hochst., and *C. acroprosodes*, Hochst., in hb. Schimp. Abyss. 1854.

Hab. Collected in Nov. 1862, *Col. Grant!* Widely spread in the African continent.

[A pot-herb, 2 feet high, by huts. Flowers in November.—J. A. G.]

3. AMARANTUS CAUDATUS, L.; DC. Prod. xiii. pt. 2, 255; App. Speke's Journ. 646.

Hab. Karagué, Feb. 1862, *Col. Grant!* A common weed in the Old-World tropics.

A small specimen mounted on the same sheet (from the Nile, 3° N. lat.) may perhaps belong to *A. chlorostachys*, Willd. (*A. patulus*, Bert.).

[This plant was common at all the cultivated parts of our route. Ribs of the green leaves pink. Seed-like fruits small, flat, and pale brown. At Madi it is grown for its property of curing headaches: all but the root is boiled; and the face and head is washed with the infusion. The root (boiled) is made into a black paste and then rubbed into cuts made in the temples.—J. A. G.]

4. Amarantus Blitum, L.; DC. Prod. xiii. pt. 2, 263; App. Speke's Journ. 646.

Hab. 1° 42′ S. and 3° N. lat., *Col. Grant!*

I have not seen specimens of this common weed. It was determined from Col. Grant's figure and description.

5. Ærua javanica, Juss.; DC. Prod. xiii. pt. 2, 299; App. Speke's Journ. 646.

Hab. By the Nile, about 14° 30′ N. lat., and near Berber, March and April, 1863, *Col. Grant!* Common eastward through Tropical Asia.

[This was first observed on the sand hillocks of the right bank of the Nile at 14½° N. lat. Again in April found it on the shingle-desert in vicinity of Berber, 17½° N. lat.—J. A. G.]

6. Ærua lanata, Juss.; DC. Prod. xiii. pt. 2, 203; App. Speke's Journ. 646.

Hab. Zungomero and Uganda, *Col. Grant!* Widely diffused through the warmer regions of the Old World.

[This sometimes bushy pot-herb, 2 feet high, grows prettily over the huts at 7½° S. lat., as our ivy covers our cottages. It was found also in the plantain-groves of Uganda on the equator. The people eat its boiled leaves.—J. A. G.]

7. Achyranthes aspera, L.; DC. Prod. xiii. pt. 2, 314; App. Speke's Journ. 646.

Hab. By the Nile, 7° N. lat., *Col. Grant!*

The determination may be correct; but the specimens are proliferous. A common Old-World weed.

[Attains a height of 6 feet, with bare branches. Stem streaked with red. Found in and about the Nile-edge in March at 7° N. lat., also at 3° 15′ N. lat., where our head servant "Bombay," who was suffering from deafness and pain in his ears, applied a hot poultice of its root; this brought a discharge of matter and gave him relief.—J. A. G.]

8. Digera arvensis, Forsk.; DC. Prod. xiii. pt. 2, 324; App. Speke's Journ. 646.

Hab. By the Nile, 17° 30′ N. lat., *Col. Grant!* Occurs eastward into Tropical Asia.

Polygonaceæ.

1. Ceratogonum atriplicifolium, Meissn.; DC. Prod. xiv. 39, *var.*

Hab. Karagué, Feb. 1862 (*Polygonum* no. 2, App. Speke's Journ. 645), *Col. Grant!*

To this species I would reduce both *C. cordofanum*, Meissn., and *C. sinuatum*, Hochst. & St., DC. Prod. *l. c.* Occurs in various localities in East Tropical Africa.

[Stem nearly round, smooth, and streaked pink; the flowers are also of this colour, and the anthers blue. The prickly fruits remain some time on the bare flower-stalk. Found at Karagué in February.—J. A. G.]

2. Rumex abyssinicus, Jacq.; DC. Prod. xiv. 68; App. Speke's Journ. 645.

Hab. 1° 42′ S. and 2° N. lat., *Col. Grant!* also in Abyssinia and on the Camaroons.

[Grows to 12 feet. Stem single, rather woody, hollow, angular, smooth, and streaked on one side with red. Petioles and leaf-ribs of a blood-red colour. Found near cultivation amongst high grass at Unyoro, 2° N. lat. One of our men had observed the natives of Fecpa (8° S. lat.) eating its leaves.—J. A. G.]

3. Rumex obtusifolius, L.; DC. Prod. xiv. 53. *Var.* valvis callosis, callo oblongo, subulis utrinsecus 5–6 rigidis uncinatis. App. Speke's Journ. 645.

Very like *R. obtusifolius*, var. *Steudelii*, Hk. f., Linn. Journ. vii. 214, excepting in the presence of a prominent callus, which, however, is sometimes present in *R. nepalensis*, Spreng., and *R. hamatus*, Trev., both of which are reduced as varieties of *R. obtusifolius*, L., by Dr. Hooker (*l. c.*)

Hab. Found on the east-coast range, at an altitude of 4700 feet, in December, at $6\frac{1}{2}°$ S. lat., near moisture, and growing 3 feet high, *Col. Grant!*

4. Rumex maderensis, Lowe, Nov. Flor. Mader. 12; DC. Prod. xiv. 67. Frutescens; foliis ovato- v. oblongo-ellipticis, acutis, basi hastatis, glabris; paniculis terminalibus, amplis, subaphyllis, multifloris; floribus hermaphroditis (v. polygamis ?) (valvis suborbicularibus membranaceis, venosis, ecallosis). App. Speke's Journ. 645.

Frutex 1–2-pedalis vel in speciminibus nostris 10–12-pedalis; caulis teres, striatus, striis alternis validioribus, glaber. *Folia* $1\frac{1}{4}$–2 poll. longa, acuta v. obtusa, apiculata; petiolus $\frac{1}{2}$–$1\frac{1}{3}$ poll. longus. *Pedicelli* graciles, flori subæquilongi. (*Valvæ* $\frac{1}{6}$ poll. diam.)

Hab. Mininga, 4° 18′ S. lat., *Col. Grant!*

The above description applies to Col. Grant's specimen, excepting as to the fruit-valves (figs. 4 and 5 of the Plate), which I have seen matured only in Madeiran specimens.

[10 feet high, in long straight stems; growing in hedges with Euphorbias at Mininga, 4° 18′ S. lat. The leaves are generally eaten away; they taste bitter.—J. A. G.]

Plate XC. fig. 1. Flower before, and fig. 2. after expansion; fig. 3. Pistil; fig. 4. Portion of fruiting panicle of a Madeiran specimen; fig. 5. Single fruit and perianth of same.

5. Polygonum barbatum, L.; DC. Prod. xiv. 104; App. Speke's Journ. 645.

Hab. East-coast range, Nov. 1860, *Col. Grant!* A wide-spread species in the Old-World tropics.

[Found by a solitary spring of water on the east-coast range. In flower November.—J. A. G.]

6. Polygonum tomentosum, W.; DC. Prod. xiv. 124; App. Speke's Journ. 645.

Hab. Upper Nile, *Col. Grant!* Also in Tropical Asia.

[Found on the Nile at 2° N., when in flower, during November; again above the Sobat river, at 8° N. lat., in March, when it was not in flower.—J. A. G.]

The above two species of *Polygonum* I have left as determined for the Speke Appendix, not seeing what better to do with them.

Nyctagineæ.

1. Boerhaavia grandiflora, A. Rich. Fl. Abyss. ii. 209; App. Speke's Journ. 645.—*B. dichotoma*, hb. Schimp. Abyss. 1719.

Hab. East-coast range, alt. 4700 feet, *Col. Grant!*

[A straggling plant, with blue flowers; found in November on the east-coast range at an altitude of 4700 feet, $6\frac{1}{2}°$ S. lat.—J. A. G.]

2. Boerhaavia diffusa, L., *var.*; DC. Prod. xiii. pt. 2, 452.

Hab. Unyoro, July 1862 (*Boerhaavia* no. 1; App. Speke's Journ. 645), *Col. Grant!*

[Collected in July at 2° N. lat., near cultivation. The root is of the thickness of the finger, carrot-shaped, and 5 inches long; the stem is at right angles to the root; and the leafy portion of it grows flat on the ground, while the flowering branches are erect and one foot high. Stem round, slightly hairy, thickly jointed, and purple. Flowers diminutive, pink, and growing on the top of what becomes the five-sided seed-vessel. The roots are eaten in famines.—J. A. G.]

PROTEACEÆ.

1. PROTEA MADIENSIS, Oliv., sp. nov. Arborescens; foliis semipedalibus lanceolato-ellipticis, utrinque angustatis, obtusiusculis, breviter petiolatis, pilis subappressis sparsis glabrescentibus; capitulo subsessili, magno, turbinato, squamis arcte imbricatis obtusis lævibus glabrescentibus; perianthii tubo villoso, limbo glabrato.

Rami teretes, læves, epidermide rubro-fusca, cito decidua. *Folia* 6–8 poll. longa, 2–3 poll. lata; petiolus marginatus, $\frac{1}{6}$–$\frac{1}{4}$ poll. longus. *Capitulum* 3–4 poll. diam.; squamæ exteriores minores, late ovato-rotundatæ, intermediæ late ovato-ellipticæ, obtusissimæ, glabratæ v. basin versus puberulo-tomentosæ, indumento deciduo, interiores longiores, 2$\frac{1}{2}$ poll. longæ, oblongæ v. oblongo-lanceolatæ, obtusæ, dorso apicem versus glabro, alabastris longiores. *Perianthium* dense villosum, apicem versus glabrum v. sparse pilosum.

Hab. Madi, Dec. 1862 (*Protea*, sp., App. Speke's Journ. 645), *Col. Grant!*

Nearly allied to *P. abyssinica*, W., differing in the form of the leaves, and glabrate involucral scales and perianth-tips.

[This shrubby tree was not observed on our route till we arrived at Madi, in December, when it was in full bloom in the forest. The people make some use of its wood; for the trunk of one had been cut down—one of 20 inches circumference; there grew from it several erect branches, 10 feet high. The bark was finely striated, cut red, and showed a white cellular wood beneath. Leaves 8 by 4 inches, elongated to points, pale, with dull surfaces; they grow obliquely to the stem, and have waved transparent edges. Each flower-head opened flat out towards the sun, and was the size of a large sunflower. The scales of the flower increase as they reach the outer circle, where they are pink, linear, and 3 inches in length; the flower is yellow, like a silvery sunflower. Native names "m'zaza" and "king-geezee" (Keeao). Boys while herding cattle wear wreaths of its flowers; the Wangamezi boil its leaves and eat them during famines. Black ants are attracted to the trees. I was told that copal-gum will always be found where this tree or shrub is abundant. Its wood makes a brilliant fire. No other uses were heard of.—J. A. G.]

Plate XCII. fig. 1. Apex of perianth-segment and opposed anther; fig. 2. Flower; fig. 3. Segment of perianth and adherent stamen; fig. 4. Pistil.

THYMELACEÆ.

1. GNIDIA INVOLUCRATA, Steud.; DC. Prod. xiv. 589. Var. *apiculata.* Tripedalis, glabra; caule erecto superne ramoso, ramis gracilibus ascendentibus; foliis anguste ovali-linearibus, utrinque angustatis, acutissimis, planis; capitulis pedunculatis; involucri foliolis membranaceo-scariosis, fuscis, glabris, ovatis, apiculatis.

Folia $\frac{1}{2}$–$\frac{2}{3}$ poll. longa. *Capitula* $\frac{1}{3}$–$\frac{1}{2}$ poll. diam., breviter v. longiuscule pedunculata, pedunculis bracteatis; squamæ interiores involucri apiculatæ v. breviter acuminatæ, $\frac{1}{4}$ poll. longæ.

Hab. Bare heights of Madi, Dec. 1862, *Col. Grant!*

This plant differs from the Abyssinian form in its pointed involucral scales. It may prove a distinct species. The flowers are far advanced, the upper part of the perianth-tube being detached in Col. Grant's specimens. The figure of the flower in the accompanying Plate is, I believe, taken from an Abyssinian specimen.

Plate XCI. fig. 1. Capitulum; fig. 2. Single flower; fig. 3. Perianth, laid open; fig. 4. Pistil; fig. 5. Persistent base of perianth; fig. 6. Same, laid open.

EUPHORBIACEÆ.

1. EUPHORBIA HYPERICIFOLIA, L.; DC. Prod. xv. pt. 2, 23; App. Speke's Journ. 646.

Hab. Unyoro, Oct. 1862, *Col. Grant!* A widely diffused weed in warm countries.

[Found near cultivation at Unyoro in October. It is bushy and milky, with a red, round, rough, jointed stem. The leaves have sharp serrate edges. Flowers diminutive, in umbels from the leaf-axils. Flower white, of four equal parts. Seed-vessel three-cornered. The natives attract guinea-fowl by putting the milk of this plant on the strings of their bird-traps.—J. A. G.]

2. EUPHORBIA GRANTII, Oliv., sp. nov. Frutescens, 4–5-pedalis; caule erecto, tereti, folioso, glabro; foliis exstipulatis, alternis, elongato-linearibus, apice tenue acuminatis, integerrimis, glaberrimis, sessilibus, superioribus congestis, basi latiore ovato-lanceolatis; inflorescentia terminali, cymosa, pedunculis glaucescentibus; bracteis late ovato-rotundatis, apice abrupte caudato-acuminatis; involucris breviter pedunculatis; glandulis 4, late cuneatis, margine exteriore appendicibus 6–8 apice breviter bi- v. trifurcatis ornato; bracteolis multifidis; ovario glabro; stylo gracili, 3-fido, ramis apice breviter et obtuse 2-dentatis.

Frutex 4–5-pedalis, glaberrimus, ramulis apicem versus glaucescentibus. *Folia* 6–7 poll. longa, $\frac{1}{2}$–$\frac{2}{3}$ poll. lata, vel superiora basi dilatata, 1 poll. lata. *Bracteæ* 1–1$\frac{1}{4}$ poll. latæ, apice longiuscule aristato-caudatæ. *Involucrum* lobis rotundatis incisis. *Glandularum* pagina superior minute tuberculata. *Bracteolæ* multifidæ, laciniis anguste lineares, laxe ciliatæ.

Hab. Unyanyembe, 5° S. lat., March 1861 (*Euphorbia* no. 2, App. Speke's Journ. 646), *Col. Grant!*

[A 5-feet-high bush, growing in the light soil of Unyanyembe, 5° S. lat. In flower March.—J. A. G.]

Plate XCIII. fig. 1. Involucre and glands; fig. 2. Staminate flower and bracteole; fig. 3. Dichotomous appendix of involucral gland; fig. 4. Lobe of involucre; fig. 5. Pistillate flower.

3. EUPHORBIA TIRUCALLI ?, L.; DC. Prod. xv. pt. 2, 96; App. Speke's Journ. 646.

Hab. 7° S. lat. to 3° 30′ N. lat., *Col. Grant!*

The fragments do not admit of determination, and I leave them as in the Speke Appendix.

[Found growing like a creeping bush, forming a network over the rocks about Madi, in December, when it was in flower. Stems round, an inch in circumference, smooth and green; branches opposite, leafless, very milky. Flowers radiate from the very tips of the branches. Natives call it "m'nyalla." It is used as a fence round villages of Central Africa. If planted singly, its branches spread widely and cover a good extent of ground; and its greatest height was 18 or 20 feet, the branches attaining 1 to 2 inches in circumference.—J. A. G.]

4. EUPHORBIA ANTIQUORUM, L.; DC. Prod. xv. pt. 2, 81; App. Speke's Journ. 646.

Hab. Common over the whole route and dotting the bare hills of Karagué, alt. 5000 feet. The Bari people at 4° 30′ N. lat. tried to poison the running streams with its branches as we marched through. Its milk is used as a glue.—*Col. Grant!*

I have not seen a specimen.

5. SYNADENIUM GRANTII, Hook. fil., in Bot. Mag. t. 5633.

Hab. 3° 15′ N. lat., Feb. 1862, near villages, *Col. Grant!*

Flowered in the Royal Gardens, Kew, November 1866.

[A bushy tree of 10 to 15 feet, with small red flowers. Milk falls in drops when any part of the tree is broken—J. A. G.]

6. PHYLLANTHUS PSEUDO-NIRURI, Muell. Arg.; DC. Prod. xv. pt. 2, 365.

Hab. 2° N. lat., Oct. 1862 (*P. Niruri*, App. Speke's Journ. 647), *Col. Grant!*

Only known from this locality.

7. PHYLLANTHUS (§ MENARDA ?), sp. (Pistillate flowers wanting.) Referred to *Anisonema multiflorum* in App. Speke's Journ. 647, from which it is rejected by Dr. Mueller (Arg.). It must remain doubtful in the absence of female flowers.

Hab. 3° 15′ N. lat., by water, Dec. 1862, *Col. Grant!*

8. HYMENOCARDIA ACIDA, Tulasne, in Ann. Sc. Nat. ser. 3, xv. 256; DC. Prod. xv. pt. 2, 477. Foliis oblongo-ellipticis, utrinque obtusissimis, supra glabratis, subtus glanduloso-lepidotis simul et hirtellis; fructibus obcordatis, superne dorso late alatis, basi truncatis retusisve.

Folia 2–2½ poll. longa, 1⅓–1½ poll. lata; petiolus ¼–⅓ poll. longus. *Fructus* samaroideus compressus, glaber, ⅝ poll. longus, 1–1¼ poll. latus.

Hab. Madi; fruit Dec. 1862, flower Feb. 1863, *Col. Grant!*

Entered in the Appendix to Speke's Journal, 647, as *Hymenocardia Heudelotii*, Planch., and lettered thus in the annexed plate prior to the preparation of the letterpress. The species (*H. acida*) is described in much detail by M. Tulasne (l. c.).

[The "m'palanyonga" (Kin.). A small tree, trunk 30 inches in circumference, with soft white bark; found in seed during December in the woods around Madi. Its wood is brittle and useless. Leaves single, alternate. Seed-vessels are flat two-winged capsules. In February, at Madi, a specimen was collected in flower, a catkin with red flowers.—J. A. G.]

Plate XCIV. (*Hymenocardia Heudelotii*, Pl., by mistake) fig. 1. Bud and bract, staminate flower; fig. 2. Staminate flower, laid open; fig. 3. Stamen; fig. 4. Fruit.

9. BRIEDELIA SCLERONEURA, Muell. Arg.; DC. Prod. xv. pt. 2, 496.

Hab. Madi, Dec. 1862 (*Briedelia* no. 1, App. Speke's Journ. 647), *Col. Grant!*

[On the rocky heights about 3° 15′ N. lat.—J. A. G.]

10. BRIEDELIA MICRANTHA, Baill.; DC. Prod. xv. pt. 2, 498. Var *ferruginea*, Muell. Arg. *l. c.*

Hab. Madi, Dec. 1862 (*Briedelia* no. 2, App. Speke's Journ. 647), *Col. Grant!*

[The branches grow close together, and are accompanied by short stumps of thorns on the stem. Found at 3° 15′ N. lat. by Madi burn in December.—J. A. G.]

11. CROTON NILOTICUS, Muell. Arg.; DC. Prod. xv. pt. 2, 598. Arbor; ramulis pilis stellatis acervulatis sparsim punctato-tomentellis; foliis late ovatis, basi sæpius cordatis, breviter et late acutatis, 5–7-nerviis, integris, supra glabratis, subtus stellato-tomentellis; petiolis limbo brevioribus; floribus fœmineis in racemis terminalibus, paniculatis, stellato-tomentosis; ovario globoso, pilis longis dense villoso; stylis bipartitis, laciniis patentibus rigidiusculis.

Folia 2½–3½ poll. longa atque lata, v. in ramulis foliiferis 10 poll. longa, 12 poll. lata; petiolus (in ramulis florif.) 1–1½ poll. longa. *Bracteæ* fl. fœm. parvæ, deltoideo-ovatæ, 1-floræ. *Fl. masc.* . . . .

Hab. Madi, Dec. 1862 (*Croton*, sp., App. Speke's Journ. 647), *Col. Grant!* Only known from this station.

["M'pæfoo," a tall shrub with a stem 30 inches in circumference, with long, straight, spreading branches, in low ground about Madi; in fruit during December. The bark resembles our beech-bark in being smooth; but it is softer. Some of the heart-shaped leaves are unusually large, 12 × 10 inches, alternate, with a spotted surface, and white underneath, with waved edges. The green unripe seed-vessels are half an inch in diameter, closely covered with white pubescence, and nearly round, three-celled and seeded: the calyx adheres to the seed-vessel, and consists of five, equal, small, broadly wedge-shaped sepals. A red dry powder covers the flower-stalks; and the leaves smell somewhat like celery. The natives called it a useless plant.—J. A. G.]

Plate XCV. fig. 1. Pistillate flower; fig. 2. Transverse section of ovary.

12. CROZOPHORA PLICATA, A Juss.; DC. Prod. xv. pt. 2, 747.—Var. *prostrata*, Muell. Arg. *l. c.*

Hab. By the Nile, 16° N. lat., March 1863 (App. Speke's Journ. 647), *Col. Grant!*

[Small pink flowers, growing flat in the clayey bed of a stream on the right bank of the Nile at 16° N. lat. in March and April.—J. A. G.]

13. ACALYPHA VILLICAULIS, Hochst.; DC. Prod. xv. pt. 2, 845. Frutescens; caule e basi lignosa decumbente subherbaceo subretrorsum hirsuto; foliis ovato-lanceolatis v. lanceolatis v. ovatis, subacuminatis, basi cordatis v. integris rotundatisque, serratis, pilosis; petiolis limbo brevioribus; spicis masc. gracilibus, fœmineis capitatis; bracteis rotundato-reniformibus, multifidis, ovarium hirsutum vix superantibus; stylis elongatis, fere per totam longitudinem pectinatim setoso-laciniatis.

Folia 2–3½ poll. longa, ½–1¾ poll. lata; petiolus ¼–2 poll. longus.

Hab. Karagué, Dec. 1861 (App. Speke's Journ. 646), *Col. Grant!* Also in Abyssinia, Sennaar, and in the Manganja hills.

[A shrub with pithy, decumbent, round, white-haired branches. In flower during December in the hills or ravines of Karagué. Female flowers have their pink pistils much branched; and the seed-vessel is roundly three-celled, with a green much-serrated leaflet at its base.—J. A. G.]

Plate XCVIII. fig. 1. Staminate flower; fig. 2. Anther; fig. 3. Bract and pistillate flower; fig. 4. Same, laid open; fig. 5. Pistillate flower, earlier stage.

14. ACALYPHA BIPARTITA, Muell. Arg.; DC. Prod. xv. pt. 2, 860. Ramis gracilibus, breviter pubescentibus; foliis ovatis, acutis, basi late cuneato-rotundatis, 3–5-nerviis, serratis, supra appresse pilosulis, subtus molliter pubescentibus; petiolis limbo 2–3plo brevioribus; spicis masc. gracilibus pedunculatis, inferne bractea fœm. unica biflora, conduplicata, fere ad basin 2-partita onustis, lobis rotundatis, circiter 20-crenato-dentatis, flores obtegentibus; stylis brevibus, pectinatim setoso-laciniatis.

Folia 2–2½ poll. longa, 1½ poll. lata; petiolus ⅝ poll. longus; stipulæ setaceæ. *Spicæ* folio subæquilongæ, pedunculo ¾–1 poll. longo. *Bractea* lobis ¼–⅓ poll. latis. *Ovarium* hirsutum; styli bracteam haud superantes.

Hab. Karagué, Nov. 1861 (*Acalypha* no. 4, App. Speke's Journ. 646), *Col. Grant!* Only known from this locality.

[This shrub was found at Karagué in November in a thicket near water. Leaves tender; branches uniform, and made into baskets in Unyoro. Natives call it "m'cætæ." The male portion of the flower grows erect; and the two leaflets enclosing the seed are below. Stem appears six-sided. A variety of

this has hazel-coloured bark; and baskets made of its withies are fine, strong, and red-tinted. People chew its roots; but I could discover no taste and no use in them.—J. A. G.]

Plate XCVII. fig. 1. Portion of inflorescence with male and female flowers; fig. 2. Conduplicate bract of female flowers; fig. 3. Staminate flower; fig. 4. Anther; fig. 5. Pistil.

15. ACALYPHA PSILOSTACHYA, Hochst.; DC. Prod. xv. pt. 2, 865; A. Rich. Fl. Abyss. ii. 246.

Hab. Karagué, Nov. 1861 (*Acalypha* no. 5, App. Speke's Journ. 647), *Col. Grant!*

Acalypha no. 6, *l. c.*, from M'bwiga, 7° 24′ S. lat., Dr. Mueller thinks may be the same species; but the specimen is imperfect. Found also in Abyssinia and Zambesi-land.

16. ACALYPHA VAHLIANA, Muell. Arg.; DC. Prod. xv. pt. 2, 873. Herba $1\frac{1}{2}$–3-pedalis; caule erecto, inferne plus minus ramoso, pilosulo v. tenuiter pubescente; foliis longe petiolatis, ovatis v. ovato-lanceolatis, acutis v. breviter acuminatis, basi rotundatis v. late cuneato-rotundatis, serratis, parce pilosulis, membranaceis; spicis subsessilibus, petiolo sæpius brevioribus; bracteis fœm. numerosis, bifloris, late truncato-rotundatis, conduplicatis, serratis, longitudinaliter nervosis, capsulas superantibus.

Folia 1–2 (v. in spp. Africæ occid. 4) poll. longa, $\frac{2}{3}$–1 poll. lata; petiolus $\frac{1}{2}$–2 poll. longus. *Spicæ* sessiles v. subsessiles, $\frac{1}{3}$–$\frac{2}{3}$ poll. longæ.

Hab. 5° S. lat., alt. 3800 feet, and Unyoro, Aug. 1862 (*Acalypha crenata*, App. Speke's Journ. 646), *Col. Grant!*

[Found about cultivated ground at Unyoro. In flower in August.—J. A. G.]

Plate XCVI. fig. 1. Staminate flower; fig. 2. Anther; fig. 3. Conduplicate bract of pistillate flower; fig. 4. Same, laid open.

17. ACALYPHA n. 3, App. Speke's Journ. 646. Not in a state to determine. The plant is glabrous, with ovate, sharply acuminate, serrate leaves, with rather long petioles, and a terminal spike of pistillate flowers with finely divided, much-exserted, red-brown styles.

Hab. Madi, Dec. 1862, *Col. Grant!*

[One of the brushwoods on the banks of Madi burn, and very pretty. Flowers in December.—J. A. G.]

18. TRAGIA MITIS, Hochst.; DC. Prod. xv. pt. 2, 912.—*T. cordata*, A Rich. Fl. Abyss. ii. 244; App. Speke's Journ. 647.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[Called "m'wavee." A climber or creeper by water, amongst bushes in the ravines about Karagué. The whole plant is covered with fine shining bristles, which sting and pain worse than any nettle. Gathered in flower at Karagué, alt. 5000 feet, during December.—J. A. G.]

19. RICINUS COMMUNIS, L.; DC. Prod. xv. pt. 2, 1017; App. Speke's Journ. 647.

Hab. Unyoro, Nov. 1862, *Col. Grant!*

[At Zanzibar this plant grows higher than the huts of the natives, who distinguish two varieties, the "m'bono" and "m'bareeka." M'bono is the smaller of the two, yielding an oil which is too odorous even for the people to use as an unguent for their bodies; but it is taken as a medicine. This variety was seen at Zanzibar only. The m'bareeka was common by huts in the interior, where the people use it medicinally, both the leaves and the oil. The green leaves, if heated and applied to a swollen leg, act as

a powerful blister, which discharges freely for several days, as in my own case when laid up at Karagué. The natives apply the oil for itch; or, if a village is infested with this, they take four of its leaves, place flour in each leaf, and this preparation is put by the pathways leading into the village.—J. A. G.]

20. Cluytia Richardiana ?, Muell. Arg.; DC. Prod. xv. pt. 2, 1044.

Hab. Karagué, March 1862 (*C. lanceolata*, App. Speke's Journ. 647), *Col. Grant!*

The specimen bears only male flowers; so that I cannot positively determine it.

[An erect shrub, in flower during February and March in the water-runs at Karagué. Leaves alternate and rather close together, with numerous minute white flowers in the axils of the leaves. —J. A. G.]

21. Manihot utilissima, Pohl; DC. Prod. xv. pt. 2, 1064; App. Speke's Journ. 647.

Hab. Mininga, 4° 18′ S. lat., *Col. Grant!* Widely cultivated in the tropics.

[Grows as far as 4° 18′ S. lat., but rarely seen to the north of this. The tuber of this useful plant is called "m'hogo." The natives say there are several varieties of it; some kinds eat best raw, others boiled, fried, roasted, or made into flour. It grows to 10 feet high, and, as a foliage-plant, would succeed in this country as well as the castor-oil plant; for they grow in the same soil and climate. The natives propagate it from cuttings placed on ridges 4 feet apart. Seed-vessel three-celled, with six ridges outside, tipped with a coral-coloured plume, and based in a circle of red. The flower and fruit are insignificant in comparison with the size of the plant; and the varieties which flower are most in esteem with the natives. The poorer classes of Zanzibar live entirely on this tuber and dried shark from the Persian Gulf.—J. A. G.]

22. Jatropha, sp. nov., App. Speke's Journ. 647.

The specimen in the Kew Herbarium is in fruit only, not affording material for adequate diagnosis, so that Dr. Mueller (Arg.) merely indicated it as a new species.

Villosula. *Folia* 4 poll. longa et lata, brevissime petiolata, trifida, serrata, lobis oblongis v. ovato-oblongis, late acutatis, cymis terminalibus corymbosis, fructu pubescente.

Hab. Madi, Jan. 1863, *Col. Grant!*

[Not a common plant. Collected in January near the burn at Madi. A foot high, and in fruit. The root was firm in the ground, and was not reached. Leaves alternate, single, tripartite, with shining surfaces and downy beneath. On cutting the stem a gummy yellow colouring-matter exudes plentifully; and this becomes glazed on paper. The seed-vessel (now unripe) is about $\frac{1}{2}$ inch long and $\frac{1}{3}$ inch in diameter, slightly pubescent, with three rounded divisions apparent on its surface, three-celled and seeded; the seeds are with difficulty cut through. The calyx adheres to the seed-vessel, and consists of five green sepals with five smaller withered petals (?) intervening. I called it the gamboge-plant; but the natives could not tell me its use or property.—J. A. G.]

Urticaceæ.

1. Celtis integrifolia, Lam.; DC. Prod. xvii. 192; App. Speke's Journ. 647.

Hab. Madi, Feb. 1863, *Col. Grant!*

["M'læweh." Trunk 12 feet in circumference. Foliage thick and umbrageous. Found only at Madi in February, when the fruit was unripe. The wood seems brittle and useless. The upper surface of the leaves shines, and is rather sticky. The fruit is not larger than a pea, and is nearly all stone. I was told by Manua, one of our men, that the people of Feepa, south of Lake Tanganyika, make necklaces of this stone-fruit by rubbing off the outer skin in water and then stringing the many-coloured stones as they would beads. The stone is round, hard, and contains a mere speck of a seed.—J. A. G.]

2. FICUS (§ SYCAMORUS) SYCAMORUS, L.—*Sycamorus antiquorum*, Gasp.; Miq. Monog. Ficuum, in Hook. Journ. Bot. 1848, 109. Arbor; ramulis petiolisque tomentoso-hirtellis, demum glabriusculis; foliis late ovatis v. ovato-rotundatis, obtusis v. late acutatis, basi cordatis 3–5-nerviis, integris, repandis v. lobato-angulatis, supra scabriusculis demum glabratis, subtus in costis hirtellis v. brevissime tomentosis; "receptaculis supra ramulos aphyllos e trunço vel ramis vetustioribus protrusos racemosis, pedunculatis, turbinatis, junioribus molliter tomentellis."—App. Speke's Journ. 647.

Folia 4–6 poll. longa, 3–6 poll. lata; petiolus $\frac{3}{4}$–2 poll. longus.

Hab. Found along the whole route, *Col. Grant!* Abundant in the Lower Nile valley. Occurs also in Abyssinia.

[This is called the genuine fig-tree by our men, the "m'kooyoo," "m'weela" (Kin.)—m'kooyoo being the generic name given by natives to all fig-trees. Found from 5° S. lat. to Egyptian territory. Leaves glossy, soft, limp, with dark green surfaces, and numerous at the tips of the branches. Fruit, unripe in December, growing on the main stem and branches in clusters of two to five. It is now pear-shape, the size of a large marble; the surface dull in colour and spotted with green: there are five purple marks along its length.—J. A. G.]

Plate XCIX. fig. 1. Female flower; fig. 2. Longitudinal section of young fig; fig. 3. Single fruit; fig. 4. Mature fig.

3. FICUS no. 3, App. Speke's Journ. 647.

I cannot satisfactorily identify this species, though the leaves resemble those of a plant distributed by Dr. Schweinfurth from Matamma as *Urostigma luteum*, Miq. (*Ficus lutea*, V.). Col. Grant's *Ficus* is a large tree, glabrous—excepting the annual shoots, which are thinly pubescent, and the pale shortly tomentose stipules. The leaves are oblong-lanceolate acute from a subcordate 3-nerved base. The fig is globose, glabrous, pale, $\frac{1}{3}$ inch in diameter, shortly pedicellate, and apparently from a short lateral common peduncle.

Hab. Madi, Jan. 1863, *Col. Grant!*

[The "millæandægæ" (Kis.) fig-tree. Trunk 12 feet in circumference at 4 feet from the ground, found by a pool of water, over and under which its thick bare roots were growing. In January the foliage was dense and autumn-tinted; the leaves thin, tender, 4 inches long, and growing in terminal tufts. The fruit grows from and below the leaf-axils, has the three sepal-marks and a circle at its flattened tip, is pear-shape when unripe, and half an inch in diameter. We eat its fruit on the Nile in February, and considered it richer than any fig we had tasted in Africa.—J. A. G.]

4. FICUS (§ UROSTIGMA) KOTSCHYANA ?, Miq. Monog. Ficuum, in Hook. Journ. Bot. 1847, 553; App. Speke's Journ. 647.

A single leaf only.

Hab. Madi, Dec. 1862, *Col. Grant!*

[The "imkoo" fig-tree, found from 5° S. to 3° 15′ N. lat. Several noble specimens were observed; one measured 12 feet in circumference 5 feet from the ground; another was 20 feet. Planks 10 feet long might have been cut from them; here it branched into two or three immense boughs. Bark grey, scaly, like that of old sycamores. The boughs were tortuous, round, and red-barked. Smaller trees have their young branches marked by rings on the bark, which is much used in making bark sheets and ropes. Leaves single, 9 by 3 inches, broadly ovate, and pointed. The fruit grows from the tips of the branches, globular, half an inch in diameter, pink, glossy, thick, with a crisped pubescence, many-seeded, and sweet. The milk is used by bird-catchers.—J. A. G.]

5. FICUS GLUMOSA ?, Delile.—*Urostigma glumosum*, Miq. Monog. Ficuum, in Hook. Journ. Bot. 1847, 552.

Hab. Madi, Dec. 1862 (*Ficus* no. 5, App. Speke's Journ. 648), *Col. Grant!*

[The "m'chæræ" (Kis.) and "m'soko" (Kin.) fig-tree. Trunk 5 feet and upwards in circumference; outer bark of a bluish stone-grey colour; under the scales it is yellow. Branches handsome and out-spreading, giving good shade. Leaves 4 by 2½ inches, rigid and not limp; petioles the same, and half the length of the leaves. The fruit grows from leaf-axils, is ¼ inch in diameter when ripe, reddish, not so downy as that of *F. sycamorus*, and marked by excrescences; two rounded bracts are attached to the fruit. Seeds numerous. Green pigeons were eating the fruit in December. Bark sheets and ropes are made in Heeao from this, the m'chæræ fig.—J. A. G.]

6. FICUS no. 6, App. Speke's Journ. 648.

A single barren branch, possibly allied to *F. trachyphylla*, Fenzl. The leaves are very scabrous, very shortly petiolate, ovate-rotundate from a cordate base, and serrate-dentate.

[A fig-tree with erect branches and very rough-surfaced leaves, seen at 3° 15′ N. lat. in December.—J. A. G.]

7. URTICA DIOICA, L.; DC. Prod. xvi. pt. 1, 50; App. Speke's Journ. 647. *Var.* caulibus petiolisque setis reversis subpatentibusve horridis.

Hab. Unyoro, Nov. 1862, *Col. Grant!* A cosmopolitan weed.

[This nettle (called "reekoossa" and "nyamboozee," from m'boozee a goat, as they bleat when stung by it) was collected from the borders of the Karagué lake, where it grows 3 feet high, with straggling 2-feet-long white roots. It was also seen fencing a sacred spot at Karagué, and here grew 7 feet high, a really handsome plant, its large leaves drooping gracefully and guarding the flowers. The upper portion of the stem was fully feathered with leaves, while below for 4 feet it was bare. The root is used as a purgative. Flowers in November.—J. A. G.]

8. FLEURYA ÆSTUANS, Gaud.; DC. Prod. xvi. pt. 1, 71; App. Speke's Journ. 647.

Hab. Madi, Dec. 1862, *Col. Grant!* Widely spread in tropical countries.

[Found amongst rocks under a fig-tree in the woods of Madi. In flower during December.—J. A. G.]

9. CANNABIS SATIVA, L.; DC. Prod. xvi. pt. 1, 30; App. Speke's Journ. 647.

Hab. Mininga, April 1861, *Col. Grant!* Cultivated through the Old-World Tropics.

[Called "bhang," and "doom'o" after it has flowered. South of the equator this plant grows on every dung-hill; and its leaves are gathered for smoking in the end of April. Attains a height of 5 feet. The men while smoking it whoop and scream loudly in a silly manner as they send the smoke from their noses and mouths. In seed during April.—J. A. G.]

CERATOPHYLLEÆ.

1. CERATOPHYLLUM, sp., App. Speke's Journ. 647.

Hab. Unyoro, Aug. 1862, *Col. Grant!*

In the absence of fruit, nothing further can be said.

[Grows in the Nile, flowering in August at 2° N. lat.—J. A. G.]

SALICACEÆ.

1. SALIX SAFSAF, Forsk.; DC. Prod. xvi. pt. 2, 196.

Hab. Sherri Pass, by the Nile, 16° N. lat., April 1863 (*Salix ægyptiaca*, App. Speke's Journ. 647), *Col. Grant!*

Apparently a common species in the Nile region. Col. Grant's specimen is in leaf only.

MONOCOTYLEDONES PETALOIDEÆ. (By J. G. BAKER.)

HYDROCHARIDEÆ.

1. OTTELIA LANCIFOLIA, A. Rich. Fl. Abyss. ii. 280, tab. 95.

A much stouter plant than that figured by A. Richard, with long-stalked leaves, with a blade 2–3 inches broad, and a spathe twice as thick.

Hab. Madi, Dec. 1862, *Col. Grant!* (*Ottelia* no. 3, App. Speke's Journ. 650.)

[Fibres from the extreme end of the root. Leaves 10 inches in length, with long stalks. They float in stagnant water. The flattened sheaths, containing two florets, are, before development, full of water. Three sepals, three petals (latter yellow and crimped), six stamina, and six pistils (deeply divided at tips). The sheath, without the flowers, protects the seed-vessel. A section has six spiral concentric cells, with numerous oblong seeds. Shells adhere to its leaves. The flowers alone are out of the water; their stalks are 14 inches long. In flower, Dec. 16, 1862, at Madi.—J. A. G.]

2. OTTELIA LANCIFOLIA, A. Rich., var.

Differs from the last by its white flowers and tubular spathe, five or six times as long as thick, with a pair of lanceolate-acuminate teeth at the throat. Besides Abyssinia, the species has now been gathered by Barter in Guinea, by Kirk in Zambesi-land, and by Lyall in Madagascar.

Hab. In the Nile, 2½° N. lat., Nov. 10, 1862, *Col. Grant!* (*Ottelia* no. 1, App. Speke's Journ. 650.)

[Flower white, appearing just above water in the Nile in November, with three petals. The stem has the appearance of a *Cactus*; but its section is of the form of a convex lens. Root-fibres very long; the whole plant 18 inches.—J. A. G.]

3. OTTELIA SCABRA, Baker, n. sp. Fluitans; foliis omnibus submersis, magnis, tenerrimis, oblanceolatis, acutis, crebre inæqualiter nervatis, ad basin longe attenuatis; pedunculo crasso elongato, scaberrimo; spatha ampullæformi, rugosa, triplo longiore quam crassa, ad collum unilateraliter fissum gamophylla; sepalis lanceolatis; petalis flavis, brevioribus.

Folia *O. lancifoliæ* sed multo majora. *Pedunculus* tripedalis, 4–6 lin. crassus, punctis duris conicis ubique rugosus. *Spatha* subcoriacea tripollicaris, punctis similibus extrorsum scabra. *Sepala* firmula, lævia, 6–9 lin. longa.

Hab. Edges of the Nile, in 12° N. lat., March 19, 1863, *Col. Grant!* (*Ottelia* no. 2, App. Speke's Journ. 650.)

[Grows in the edges of the Nile at 12° N. lat. Leaves 3 feet long and 3½ inches wide, with frilled edges. Flower-stalk as rough as a coarse file, 3 feet long, thick and flattened towards the base. In March the flowers were undeveloped, but showed a yellow colour. They alone were *above* water. —J. A. G.]

4. VALLISNERIA ÆTHIOPICA, Fenzl?, in Flora, 1844, 311. Agrees with No. 284 of Kotschy's plants of Sennaar, so far as regards leaves and habit, but is not in flower. It has dense rosettes of ligulate-oblanceolate sessile leaves not more than a couple of

inches long, bluntish at the point, and distinctly serrulate at the edge, and spreads copiously by means of filiform stolons.

Hab. Edges of the Nile, 14° N. lat., March 1863, *Col. Grant!* (App. Speke's Journ. 650.) We have what seems to be the same from Scinde, gathered by Stocks.

[Found on the edges of the Nile at 14½° N. lat., March 1863. Propagating by suckers.—J. A. G.]

5. Hydrilla verticillata, var. brevifolia, Caspary, in Prings. Jahrb. i. 415? Agrees with the Indian specimens of Caspary's plant in habit and leaf, but wants flowers.

Hab. Nile, 2° N. lat., *Col. Grant!* (*Hydrilla dentata*?, App. Speke's Journ. 650.)

[Grows nearly submerged in the Nile, at 2° N. lat., during November, when in leaf only.—J. A. G.]

Scitamineæ.

1. Amomum, sp., in leaf only. The leaves quite agree with those of *A. angustifolium*, Sonnerat (*A. Daniellii*, Hook. fil. Bot. Mag. tab. 4764).

Hab. Ukidi, Nov. 24, 1862, *Col. Grant!* (App. Speke's Journ. 648.)

[This plant is plentiful in the Uganda and Ukidi forests, where it grows in shade in rather dry ground concealed by tall grass. Height about 4 feet. In fruit November. The roots creep along the ground, are jointed, and send up shoots which cover large spaces. Leaves alternate, 13 by 3 inches, stalkless, but sheathing the stem, and split down to the next lower leaf. The fruit is of the shape of a banana, but with a scarlet surface; it is 5 by 1 inch in size; and four to five of them grow together. They are developed underground, growing from the root of the stem. On attaining maturity, they partly push themselves out of the ground, showing their scarlet skin, but require to be dug out of the earth. The taste is refreshing and lemon-like. The edible part is the pulp round the black seeds; the outer skin and a membrane within it are thrown away. The peel does not come off freely like that of the banana; and the seeds are like those of the apple when ripe, but are not flat. I never tasted the seeds. The Waganda string the *fruit* together, wearing them as a garland or as a necklace, which is very becoming to their bronze skins. The seeds and leaves were preserved in Kew. My journal of May 19, 1862, mentions, "Path strewed with scarlet husks of a seed the Waganda are fond of." I never saw the Waganda eating the seeds, and think this quotation refers to the lemony pulp surrounding the seed and its envelope. —J. A. G.]

Musaceæ.

1. Musa sapientum, Linn.; Horan. Prod. Scitam. 42. No specimen. (App. Speke's Journ. 648.)

[This fruit is cultivated near the coast to a small extent; and there are some grown at 5° S. lat., where, on account of constant quarrels between the Zanzibar traders and the native population, gardens of bananas are rarely met with. In the kingdom of Uganda and along the western side of the Victoria Nyanza lake, the country is literally a series of banana forests surrounding the dwellings. There are many varieties known to the people—those for boiling like potatoes, eating, and for wine-making. The boiling variety is pulled green, and generally boiled in its own leaf along with beef or mutton; they are excellent in this way. The eating kinds are often luscious and fine-flavoured. Wine is made from the ripe fruit by putting a quantity, peeled, into a wooden trough the length of a log canoe, adding grass, stamping the mass, cleansing it of sediment, adding the flour of parched grain, and covering over the whole canoe, first with the green leaves, and then with a large quantity of dead leaves, so as to exclude the air. The flour and rotting leaves assist in a slight fermentation. On the third day it is ready; and if well made, I know of no better drink, tasting somewhat like Sauterne wine, but slightly sparkling. The leaves and stem of the plant are made into grain-covers, lashings, fences, or screens; a chip from the bark serves to scrub

the hands and body; the leaf-midrib makes a temporary pipe-stem; and water is collected in the leaves. The general term for the plantain is "n'deezee;" but there is the "mamoonyew" for boiling; the "m'beev" for the ripe fruits, which are excellent for making wine, but are indifferent when boiled; and the "m'konothembo," or elephant's fingers, are a very large, coarse eating variety. At Unyanyembe, Moossah presented us with dried banana from Ugigi. They were not so tough as our Normandy pippin, and just as pleasant to eat.—J. A. G.]

2. Musa Ensete, Gmel.? (Bot. Mag. tab. 5223–4; *Ensete edule*, Bruce).

Hab. Near a Madi village, Dec. 1862, *Col. Grant!* (App. Speke's Journ. 648.)

[The first time we came on this plant was in the forest, while on the march, near a Waganda village. I remained so long wondering at its form and size that my companions got out of sight. The trunk was as if one huge drum was placed upon another. From the top, handsome broad leaves radiated in every direction, some hanging down to the ground. It was wild, and not in fruit or flower in May; but I afterwards heard that its seeds are called "m'seegwah" (Kis.) and "m'tembeh" (Kin.). The Waganda wear them as necklaces and anklets. They are black, irregular-shaped, and glossy. This plant was the only monster specimen met with; and it may be a distinct species; for all the fine specimens of *Musa Ensete* seen in Algiers, in the Jardin d'Essai, and in Europe differ in form from this monster. They have long, tall, but stout stems in proportion to their leaves. At 4° N. lat. we found the regular *Ensete* amongst the rocks. The leaves were more coarsely ribbed than the ordinary plantain, and the midrib was brick-red. They were young plants, a foot high; and goats seemed to have eaten their leaves.—J. A. G.]

Orchideæ.

1. Angræcum Grantii, Bateman. Ad *A. caudatum* habitu arcte affinis, sed perianthio ignoto inter species incertas collocandum; fibri radiculares crassi, flexuosi, dense cæspitosi, 4–6-pollicares; folia 2, radicalia, oblanceolata, carnosa, suberecta, obtusa, 4–5 poll. longa, supra medium 12–15 lin. lata, ad basin 3–4 lin. latum attenuata; scapus gracilis, tripollicaris, bracteis 2–3 parvis latis amplexicaulibus instructus; racemus laxissime 3–4-florus secundus; ovarium maturum clavatum, 15–18 lin. longum, 6-costatum, basi in pedicellum brevem angustatum; calcar gracillimum semipedale, spiraliter tortum; petala et sepala in exemplaribus desunt.

Hab. On trees, Madi, Dec. 1862, *Col. Grant!* (*Angræcum* no. 1, App. Speke's Journ. 648.) Named by Mr. Bateman, at a meeting of the Royal Horticultural Society, soon after Col. Grant's return to England. Dr. Reichenbach thinks it may be *A. Kotschyanum*, Reichb. fil.

[Found in fruit 19th Dec. at camp Madi, 3° 15′ N. lat., growing on a lichen-covered bough of the *Kigelia pinnata*, and stuck to a *Polystachya*. The leaves are spotted with black, have entire waved edges, thick and fleshy. Seed-vessel with its stalk 2–3 inches long, 6-grooved, and full of a saffron cottony substance. The length of tail was not noted; but in the dried specimens at Kew they are 5½ and 7¼ inches long. Orchids like the above are used in Ugeendo as a remedy for temporary blindness. They are mashed in water; and the patient bathes in this, but allows none of the liquid into his eyes. Orchids were rarely met with on the route; but this one was common at the above locality.—J. A. G.]

2. Lissochilus Grantii, n. sp., Reichb. fil. Pedunculo prope tripedali, valido, distanter vaginato, vaginis apice acutis; racemo subpedali; bracteis lanceolatis, acuminatis, ovarii pedicellati dimidium inferius æquantibus; sepalis oblongis, obtusis, tessellinerviis; petalis cuneato-ovatis obtusis multo latioribus; labelli trifidi laciniis lateralibus semioblongis, retusis, lacinia media elliptica, distincte tricarinata; calcari cylindraceo apice obtuso, lamina prope quater breviore.

Bulbous. Found by water, Rubeho, Dec. 1860, 4700 feet. (*Lissochilus* no. 1, App. Speke's Journ. 648.)

Ill. Grant, viro excellentissimo, de geographica ac de botanica disciplina meritissimo pio animo dicata. (Description kindly furnished by Professor Reichenbach.)

[Has a yellow flower, and grows by water at 6° 38′ S. lat., on the east-coast range, at an altitude of 4700 feet. Found in flower Dec. 1860.—J. A. G.]

3. LISSOCHILUS OLIVERIANA, Reichb. fil., n. sp. Habitu *Lissochili calopteri* ac *L. Memetorum*, Reichb. f., pedunculo gracili, ultrabipedali; racemo elongato; bracteis linearibus acuminatis, ovaria pedicellata subdimidio æquantibus; sepalis lanceolatis, acutis; petalis rhombeo-ovatis, utrinque rotundatis, bene latis, quam sepala subbrevioribus, labello trifido, laciniis lateralibus triangulis, obtusis, lacinia media rhombea obtusangula tricarinata, carinis obtusis contiguis in unam confluentibus.

Karagué, March 1862, No. 463. Flowers yellow, *Col. Grant!* (*Lissochilus* no. 2, App. Speke's Journ. 648.)

Sepala certe brunneo-viridia; species pulchra, annuente egr. Grant ill. Oliver dicata, cum de universa arte botanica et summe thesauro Museo Kewensi, tum de plantis Grantianis meritissimo. (Description kindly furnished by Professor Reichenbach.)

[Five feet high, in flower during March at Karagué, with a single unbranched erect stem, and now no leaves on its lower part. The three linear portions of the flower are green, spotted with brown, and the rest of the flower is yellow. Peduncle twisted. Two stamina.—J. A. G.]

4. ANSELLIA AFRICANA (Lindl. Bot. Reg. 1846, tab. 30), var. NILOTICA, Baker. Differs only from the Guinea plant by the labellum being as long as the segments of the perianth, with narrower and longer lateral lobes, and the column longer as compared with the typical form in the same proportion.

Hab. In thick clusters on tall-stemmed trees, M'bwiga, 7° 30′ S. lat., alt. 1200 feet, Oct. 1860 (App. Speke's Journ. 648), *Col. Grant!*

[Three feet high. Roots strung on like beads on a thread. Found 30th October, 1860, at 7° 30′ S. lat., 37° 10′ E. long., altitude 1200 feet, living in thick masses on the lofty-stemmed trees about the valleys. It has so wild an appearance from its spots and its yellow flowers, which are barred inside and outside like a zebra's skin, that I named it the "Giraffe parasite." The Wahiao use its jointed roots medicinally, and call the plant "mitool'o."—J. A. G.]

5. POLYSTACHYA, sp. In fruit only. Habit of the small forms of *P. luteola*, with narrow leaves, and an oblong instead of a cylindrical capsule.

Hab. With *Angræcum Grantii*, at Madi, Dec. 1862 (App. Speke's Journ. 648), *Col. Grant!*

[This orchid was observed stuck to an *Angræcum* which grew in the moss-covered boughs of a *Kigelia*. The bulb is onion-shape, and cuts solid. The seed-vessels, with six outer ribs, ripe in December, are elongated, and not so large as a currant. One side is split open, emitting the seeds, which resemble a white fibrous dust. This is used by the natives as explained under *Angræcum*.—J. A. G.]

IRIDACEÆ.

1. GLADIOLUS ANGUSTUS, Linn. Sp. Pl. 53; Miller, Ic. tab. 142. fig. 2; Bot. Mag. tab. 602.

Hab. Hedges and watery places, 5° 50′ S. lat., 33° E. long., *Col. Grant!* (*Gladiolus* no. 3, App. Speke's Journ. 649.) A Cape plant.

[2½ feet high. Flowers tinged with yellow. By the fences and in moist places at 5° 50′ S. lat., where *Gladioli* were plentiful.—J. A. G.]

2. GLADIOLUS CORNEUS, Oliv., sp. nov. Bulbo ovoideo, tunicis membranaceis, striatis; foliis 3–4, rigidis, anguste linearibus; floribus 3–4, magnis, albis, laxissime spicatis; bracteis linearibus, coriaceis, florem interdum superantibus; perianthii segmentis tubo curvato infundibulari æquilongis, subobtusis, apice minute corneo-aristatis, superioribus late oblongis, inferioribus oblongo-lanceolatis.

Caulis 2–3-pedalis. *Folia* 6–9 poll. longa, 3–4 lin. lata, marginibus et costa incrassatis. *Spathæ* valvula major 3–4 poll. longa. *Perianthium* 2½–3 poll. longum, segmentis superioribus medio 9–10 lin. latis.

Hab. Moist ground, 5° 50′ S. lat. (*Gladiolus* no. 2, App. Speke's Journ. 649), *Col. Grant!*

Of the Cape species this is nearest to *G. blandus*, from all the forms of which it may readily be known by its curiously aristate perianth-segments and narrow rigid leaves.

[Attains a height of 30 inches or more. Stem often much twisted. Found in meadows at 5° 50′ S. lat., altitude 4000 feet. The flowers are the colour of a quill or of a pale transparent horn.—J. A. G.]

Plate C. fig. 1. Anther; fig. 2. Stigma.

3. GLADIOLUS SALTATORUM, Baker, n. sp. Bulbo globoso, tunicis membranaceis; foliis 3–4, rigidis, anguste linearibus; floribus 3–4, magnis, albis, rubro tinctis, laxissime spicatis; bracteis lanceolatis, flore brevioribus; perianthii segmentis obtusis, tubo infundibulari curvato paullulum brevioribus, superioribus late oblongis, inferioribus angustioribus brevioribus.

Caulis 2–3-pedalis. *Folia* 3–4 lin. lata, inferiora pedalia vel sesquipedalia. *Spathæ* valvula major 2 poll. longa. *Perianthium* 3–3½ lin. longum, segmentis superioribus medio 10–12 lin. latis.

Hab. Karagué, alt. 5000 feet, March 1862, *Col. Grant!* (*Gladiolus* no. 1, App. Speke's Journ. 649.)

Still nearer to *G. blandus* than the last, but easily to be distinguished by its narrow rigid leaves.

[2 feet to 32 inches high. The sheathing bract split on one side to its base. Corolla white, of six unequal petals divided one fourth of their length; petal-tips pink. Many-seeded. The round black seeds are pierced and worn as necklaces or round the leg above the calf, or they are put into a small gourd which dancers wear on the ankle as a rattle. In flower at Karagué in March.—J. A. G.]

4. MONTBRETIA LAXIFOLIA, Klatt, Linnæa, xxxii. 754. Bulbo parvo, globoso, tunicis reticulatis, areolis superioribus rhombeis; caule gracili; foliis 3–4, linearibus, glabris, subcoriaceis, prope basin confertis; spica laxe 12–20-flora, cauli æquilonga; spathæ valvis lanceolatis, inæqualibus; perianthii rubelli tubo infundibulari, ore late aperto, segmentis oblongis, obtusis, subæqualibus, tubo brevioribus; genitalibus inclusis.

Caulis subpedalis. *Folia* semipedalia, plana, acuminata, 4–5 lin. lata. *Spathæ* valvæ 3–6 lin. longæ. *Perianthium* 12–15 lin. longum; segmentis 3–4 lin. latis.

Hab. In quantities by hedges, 5° 50′ S. lat., alt. 4000 feet, *Col. Grant!* (*Gladiolus* no. 4, App. Speke's Journ. 649.) Also a Cape species.

[1 to 2 feet high, with bright pink flowers. Found in quantities, as if planted there in beds, by the hedges at 5° 50′ S. lat., altitude 4000 feet. A pretty delicate-looking plant, with a bulbous root.—J. A. G.]

Plate CI. A. fig. 1. Anther; fig. 2. Stigma.

AMARYLLIDACEÆ.

1. CRINUM YUCCÆFLORUM, Salisb. Parad. t. 52.—*C. Broussoneti*, Herbert, Bot. Mag. t. 2121; var. *yuccoides*, Herb. Kunth, Enum. v. 568.

Hab. Madi, Jan. 1863, *Col. Grant!* (App. Speke's Journ. 649.) Also a plant of Guinea and Sierra Leone.

[Bulb 20 inches in its greatest circumference at the base, first found by the late Captain Speke at Madi, where I saw it in full flower, growing by the edge of a boggy burn in January. The temperature was like our summer. Leaves $2\frac{1}{2}$ inches broad and 15 inches in length, thin, unspotted, finely striated, with short sheaths. Flower-stalk 20 to 24 inches long, growing out from one side of the leaves; the cross section the shape of a convex lens, smooth, solid, rather angular, with one side purple-tinted. Three bracts at the point where the five to six flower-stalks branch off the main stem; flowers drooping; calyx of three outer and three inner sepals, white, with a line of pink-purple in their centres; anthers half-moon shape, black, with a white centre along their curve. The seed-vessel, if pressed, divides into three distinct cells and three smaller ones; and a longitudinal section shows numerous undeveloped seeds.—J. A. G.]

[In October 1861, while encamped in Ugombeh, lat. $3\frac{1}{5}$° S., long. 32° E., alt. 3480 feet above the level of the sea, my servant, Ulede, who assisted me with the plants, brought a curiosity from the forest. The nature of the country where it was found is arid, sandy, undulated, and covered with forest. The whole of it was the colour of pea-straw, tough, and difficult to break or cut, thick but as light as an inflated ball of India-rubber. It stood about 2 feet in height, and consisted of a spherical centre, with arms spreading in every direction, each one averaging 8 to 10 inches in length; they were empty, hollow, broad and flat at their tips, where they were hooked, and split on their inner edge. There were not less than thirty of these arms, though the number was not counted, all of which radiated from the central sphere, which was, say, 2 inches in diameter. The centre golf-like ball was empty, hollow, and without any scar or mark of connexion.

From its unportable form and other circumstances I could only make a sketch and notes upon it. Our followers informed us that the wind blew it about the forests, and children tossed it in the air. It was the only specimen seen; and I never could make any thing of my sketch till I luckily showed it to the late Dr. Welwitsch, who asked many questions, some rather irritating, such as, "Was it the work of an insect?" However, to my great delight (for ten years had elapsed since I met with it), an idea struck the Doctor, who produced similar specimens dried while in the green state. His were not so large; but he pronounced mine to be "probably an Amaryllidaceous plant between *Buphane* and *Brunsvigia*, detached fruit-bearing umbel" (July 8th, 1871). The curiosity, therefore, which Ulede brought me is a marvellously large umbel of a bulbous undescribed plant, probably a *Crinum*?—J. A. G.]

HYPOXIDACEÆ.

1. HYPOXIS OBTUSA, Burch. Bot. Reg. t. 159.

Hab. East-coast range, Oct. 1860, *Col. Grant!* (*Hypoxis* no. 2, App. Speke's Journ. 649.)

Flowers smaller and anthers shorter than in the Cape specimens.

[Found on the east-coast range of hills in flower, October. Bulbous plant, with yellow flowers.—J. A. G.]

VELLOSIACEÆ.

1. VELLOSIA SPEKEI, Baker, n. sp. Fruticosa; ramis deorsum basibus amplexicaulibus pilosis foliorum multorum delapsorum cinctis; foliis linearibus, acuminatis, rigide coriaceis, supra basin glabris; costa faciei inferioris et marginibus serratis; pedunculis

unifloris, foliis brevioribus, flexuosis, glanduloso-scabris; ovario nudo, globoso; perianthii segmentis lanceolatis.

Folia 6–9 poll. longa, 3–6 lin. lata, crebre nervata. *Pedunculus* 2–3-pollicaris, deorsum nudus. *Ovarium* maturum 5–6 lin. crassum. *Perianthii* segmenta 10–12 lin. longa. *Squamæ* basales persistentes foliorum arcte imbricatæ, pilosæ, 6–9 lin. latæ, tricuspidatæ.

Hab. Boss Rock, 6° S. lat., alt. 4000 feet, *Col. Grant!* (*Hypoxis* no. 1, App. Speke's Journ. 649.)

[This alpine-like bush was found in but one locality, where a spring oozes from the "Boss rock" previously described. In general appearance it resembles a stunted and contorted palm. It is but 6 feet high, much branched, with a trunk 6 inches in girth; this includes the scales of old petioles and a central vital part of solid wood no thicker than the quill of a goose. The main stem breaks with very little bending, being so dry and the fibre so rotten; a section of the upper branches is indistinctly triangular. The leaves are broadest at their centres; the ribs are very fine, parallel, and close together. The flowers, on the 28th and 29th Dec., were withered, but seemed purple.—J. A. G.]

DIOSCOREACEÆ.

1. DIOSCOREA SATIVA, Linn. Sp. Plant. 1463; Hort. Cliff. i. 28, non Kunth.—*Helmia bulbifera*, Kunth, Enum. Pl. v. 435.

Hab. Unyoro groves, July 20, 1862, *Col. Grant!* (*D. bulbifera*, App. Speke's Journ. 650.)

[A climber, without thorns; leaves alternate, with eleven ribs. Fruit three-cornered, the size and shape of a Brazil nut; but it cuts like a raw potato, and shows germs of seed inside. The centre of each side has a bud-like process; and when the fruit is allowed to remain on the ground, roots are soon formed. We eat it in Uganda, and found it pleasant, like a boiled plantain in flavour.—J. A. G.]

2. DIOSCOREA, not in flower. Perhaps a variety of the last.

Hab. Uganda plantain-groves, July 1862, *Col. Grant!* (*Dioscorea* no. 1, App. Speke's Journ. 650.)

[A round twisted stem, upon which there are very short, sharp, green thorns, no tendrils, neither is the plant milky. It climbs up the trunks of plantain-trees. Leaves opposite, glossy, with seven distinct reticulated ribs; not in flower or fruit during July. It is planted on heaps of earth, and trained up single poles. We eat its tubers in Kittara; it is as thick as the arm, and sometimes round. Called "vee-azee koobba,"=the large tuber.—J. A. G.]

ALISMACEÆ.

1. SAGITTARIA OBTUSIFOLIA, Linn.; Kunth, Enum. Pl. iii. 158. Foliis longe petiolatis, obtusis, profunde sagittatis; rachi florali simplici vel sæpissime ad basin ramis multis verticillatis prædita; floribus pedicellatis, in verticillos remotos multifloros dispositis; perianthii segmentis 6, obovatis, obtusis, 3 interioribus majoribus petaloideis deciduis; staminibus circiter 6; ovariis 6–30, globosis, lateraliter compressis, maturis 3-locellatis.—App. Speke's Journ. 650. *Alisma sagittifolia*, Willd. Spec. Plant. ii. 277. *Limnophytum obtusifolium*, Miq. Fl. Ind. Bat. iii. 243. *Dipseudochorion sagittifolium*, Buchen. Flora, 1865, 245. *Alisma Kotschyi*, Hochst., in Kotschy's Pl. Nub. no. 169.

Hab. In the Nile, 4° 55′ N. lat., Feb. 22, 1863, *Col. Grant!*

A common Indian species, which we have also from Nubia, gathered by Petherick, and from Zambesi-land, gathered by Kirk. A large proportion of the flowers bear both stamens and pistils, so that it is a connecting-link between *Sagittaria* and *Alisma*. Buchenau has made it into a genus, on the ground of

the structure of the fruit, in which two barren cells are formed, one on each side of the central cell that contains the solitary seed.

[Growing in water of the Nile at Gondokoro, 5° N. lat., and called "myoongee" (Kis.). Flower-stalk 18 inches high, now (February) in seed.—J. A. G.]

Plate CII. fig. 1. Flower; fig. 2. Carpel; fig. 3. Head of ripe carpels; fig. 4. Fruit-carpel.

POTAMEÆ.

1. POTAMOGETON LUCENS, Linn.; Kunth, Enum. Pl. iii. 132; App. Speke's Journ. 651.

Hab. In the Nile, 2° N. lat., Nov. 1862, *Col. Grant!* A form with lanceolate, acuminate leaves, like Gay's type specimens of his *P. longifolium* from Senegambia.

[Found on the sides of the Nile at 2° N. lat., flowering in November.—J. A. G.]

APONOGETEÆ.

1. APONOGETON LEPTOSTACHYUM, E. Meyer, in Herb. Drège.—Var. *minor*, Baker.

Hab. Ganga Thembo, Jan. 24, 1863, *Col. Grant!* (*Aponogeton* no. 1, App. Speke's Journ. 651.)

This is much smaller than any of the Cape specimens, but agrees with them both in leaf, flower, and general habit.

[This 2-inch-high plant is common in the marshes at 5° 45′ S. lat., alt. 4377 feet, and was flowering there in January. Flowers bright purple, generally two upon a stalk.—J. A. G.]

2. APONOGETON VALLISNERIOIDES, Baker, n. sp. Submersum, dense cæspitosum; foliis membranaceis, ligulatis, obtusis; pedunculis fluitantibus, foliis 3–4plo longioribus, floribus in spicam secundam dense congestis, rachi complanata; bracteis floralibus evanescentibus, ovario maturo vix longioribus.

Folia 4–5 poll. longa, 2 lin. lata, ad basin nullo modo angustata. *Spica* pollicaris, 3 lin. crassa. *Ovarium* ovoideum, vix 1 lin. longum, stylo persistente coronatum. *Semina* in capsulis unicis 6–7 fusiformia.

Hab. In stagnant water collected on rocks, Ukidi, Nov. 1862, *Col. Grant!* (*Aponogeton* no. 1, App. Speke's Journ. 650.)

This has a spike like that of the Indian *A. monostachyum*, Roxb., with leaves, in shape and texture, just like those of a small specimen of *Vallisneria*. The flowers are densely crowded, and the ovaries of those of the upper third of the spike do not seem to ripen. The largest number of ovaries to a flower that I could make out was four. Up to the present time all the species known in Africa have had a forked, and those in India and Australia a simple spike.

[Gathered at Ukidi, 2¼° N. lat., in November 1862, where it grows entirely submerged, all but the flower, in stagnant water which has accumulated on the surfaces of huge masses of igneous rock.—J. A. G.]

AROIDEÆ.

1. ANCHOMANES HOOKERI, Schott, Prod. Aroid. 134?; App. Speke's Journ. 651; Bot. Mag. tab. 3718 & 5394?

Hab. Madi, Dec. 15, 1862 (leaf only), *Col. Grant!*

[The "yalwah" (Kin.) bulb is 30 inches in circumference, and the plant 3 feet high; stem single, erect, and thorny as well as the petioles. The top of the stem divides into three frond-like leaves. The lower leaves differ entirely in shape, and are smaller than the three at the top of the stem; also they are sometimes alternate and opposite in the same plant. The Wanyamezi cook the bulb as food. There were no flowers in December, and the stem was dying at this the autumn season. Found at 3° 15′ N. lat., in moist shaded slopes.—J. A. G.]

2. Richardia ?, App. Speke's Journ. 651.

Hab. Madi marshes, Dec. 1862 (leaf only), *Col. Grant!*

[A rare marsh plant, in leaf only during December, at 3° 15′ N. lat.—J. A. G.]

3. Amorphophallus ?, App. Speke's Journ. 651.

Hab. Ukidi, Nov. 1862 (leaf only), *Col. Grant!*

[Leaf only. Not in flower during November, at 2½° N. lat., and 1 foot high.—J. A. G.]

4. Colocasia antiquorum, Schott, Prodr. Aroid. 138; App. Speke's Journ. 651. No specimen.

["Myoog'wah." A few plants generally round or outside the huts of Uganda and Unyoro; also cultivated on the bank of a stream at 2° S. lat. The petioles and leaves make a potherb. The Waganda use it for sore throat.—J. A. G.]

Lemnaceæ.

1. Pistia Stratiotes, Linn., App. Speke's Journ. 651.

Hab. In the Nile, Nov. 1862, *Col. Grant!*

[At 13° N. lat., during March, the Nile begins to flood, carrying down quantities of débris; this plant floated on the stream like a rosette; but a few miles further down none were visible. Seen also on the edges of Lake Windermere and at 2° N. lat.—J. A. G.]

Liliaceæ.

1. Aloë abyssinica, Lam. ?

Hab. Unyoro, Nov. 1862, *Col. Grant!* (*Aloë* no. 2, App. Speke's Journ. 649.)

[A low-growing herbaceous plant, without leaves, but in flower during February. Inflorescence branched. Flowers green at the tip; then follow yellow and red. Seed-vessel three-celled, three-cornered. In November a leafy specimen, probably of this plant, had yard-long leaves, with indistinct white streaks and prickled edges. The juices of the plant have a disagreeable odour. The Waganda make their finer ropes from its leaves; and I was told that the Banians make pickles of its leaves, and call it "keesongweh."—J. A. G.]

Another aloe, 12 to 15 feet high (*Aloë* no. 1, App. Speke's Journ. 649), with linear, serrated, fleshy leaves condensed into a crown, was seen in a sandstone island, Urigé valley, 2° S. lat., Nov. 1861.

2. Kniphofia Grantii, Baker, in Journ. Linn. Soc. xi. 363. Foliis anguste linearibus, margine lævibus; racemis densifloris; pedicellis brevissimis bracteis linearibus 3–6plo brevioribus; perianthio supra ovarium valde constricto, staminibus æquilongo, stylo breviore, dentibus deltoideis.

Folia 12–15 poll. longa, supra basin 5–6 lin. lata. *Bracteæ* 3–6 lin. longæ. *Perianthium* 9–10 lin. longum, fauce 2½–3 lin., supra ovarium vix 1 lin. crassum.

Hab. Rubuga, lat. 6° S., *Col. Grant!* (*Veltheimia*, sp., App. Speke's Journ. 649.)

[Inflorescence an erect plume; upper bells pink, lower yellow; appears in swamps after the first burst of the rains, alt. 4400 feet. The natives collect its flowers for spinach, which is very good, but too honey-tasting. Also seen 1° N. lat.—J. A. G.]

Plate CI. B. fig. 1. Flower; fig. 2. Same, laid open.

3. Urginea micrantha, Solms; Baker, in Journ. Linn. Soc. xiii. 217.

Hab. Rocky ground, Madi, Dec. 1862, *Col. Grant!* (*Urginea* ?, App. Speke's Journ. 649.)

[The flower-stalk is about 3 feet high; in rocky soil, Madi, December. The root is like the largest onion, and scales off in a similar manner, with a disagreeable bitter taste. A few short withered leaves were

still round the base of the flower-stalk. Flower-stem covered with flowers, without leaves, and irregularly round. Flower of six equal white petals; their midribs brown outside. The flower closes and protects the seed-vessel, which has three cells, with numerous seeds. The root is not eaten; but the Wanyamezi gather the flowers and branches, chop them up, and roast them, to mix with other vegetables.—J. A. G.]

4. ALLIUM CEPA, Linn., App. Speke's Journ. 649. No specimen.

[Cultivated by the Arabs only, at 5° S. lat.—J. A. G.]

5. CÆSIA AFRICANA, Baker, n. sp. Herba erecta, acaulis, fibris setosis radicalibus copiosis; foliis 3–4 synanthiis loratis persistentibus membranaceis glabris, margine ciliolatis; floribus dense spicatis; bracteis rubellis, lineari-subulatis; perianthii diutine infundibularis, segmentis oblongis, albidis, dorso rubellis, uninervatis; genitalibus exsertis; capsulis latioribus quam longis, profunde trilobatis; valvis acutis, membranaceis, horizontaliter venosis, demum secedentibus; seminibus in loculo 1–2 discoideis.

Folia pedalia et ultra, 4–6 lin. lata, venis a costa utrinque 10–12 distinctis, marginibus purpureo tinctis, ciliolatis. *Scapus* teres, gracilis, glaber, semipedalis. *Spica* 4–6 poll. longa, expansa 8–9 lin. crassa, floribus 50–100 et ultra dense confertis. *Bracteæ* persistentes, inferiores 5–6 lin. longæ, omnes ante anthesin protrusæ. *Perianthium* 2½ lin. longum. *Capsula* 2 lin. lata, 1½ lin. longa.

Hab. Rubuga, in swampy ground, alt. 4000 feet, *Col. Grant!* (*Asphodelea indeterminata*, App. Speke's Journ. 649.) Gathered also by Dr. Kirk at Shupanga.

This wants the twisted flowers of the Australian species of *Cæsia*, and differs from them also by its *Chlorophytum*-like capsule and seeds, and dense spicate inflorescence.

[Common in bogs at 5° 50′ S. lat., alt. 4000 feet.—J. A. G.]

Plate CIII. A. fig. 1. Single detached flower with bract; fig. 2. Flower expanded; fig. 3. Pistil; fig. 4. horizontal section of ovary.

6. ANTHERICUM (PHALANGIUM) GRANTII, Baker, sp. n. Herba vix caulescens; fibris radicalibus setosis, copiosis; foliis duris persistentibus linearibus, dense breviter pilosis; scapo piloso, supra basin folio unico instructo; floribus 12–20 in racemum laxum dispositis, inferioribus 2–3natis; bracteis minutis, deltoideis; pedicellis brevissimis, inarticulatis; perianthii albidi segmentis lanceolatis acutis, dorso multinervatis; staminibus inclusis, filamentis lævibus complanatis; stylo curvato, elongato, vix exserto.

Folia 6–9 poll. longa, medio 5–6 lin. lata, basin caulis amplectentia, venis a costa utrinque 12–15 distinctis, pilis brevissimis patulis albidis persistentibus vestita. *Caulis* subpedalis, folio unico reducto supra basin præditus. *Racemus* 2–3-pollicaris, expansus 15–18 lin. latus. *Perianthium* 7–8 lin. longum, segmentis medio 1½ lin. latis, venis dorsalibus 6–7 distinctis.

Hab. Common in marshes, Tura country, *Col. Grant!* (*Asphodelus*, sp., App. Speke's Journ. 649.)

[Common in marshes, collected near the "Bass" rock, flowering in December, at an altitude of 4068 feet, in 6° 4′ S. lat., and about 33½° E. long.; 15 to 18 inches high, the leaves nearly as long as the flower-stalk.—J. A. G.]

Plate CIII. B. fig. 1. Separate flower; fig. 2. Pistil; fig. 3. Horizontal section of ovary.

7. CHLOROPHYTUM AFFINE, Baker, n. sp. Herba acaulis; fibris basalibus paucis, setosis; foliis pluribus linearibus acuminatis, margine ciliolatis; floribus 20–50 in racemum sublaxum rachi pilosa dispositis, inferioribus geminis; bracteis magnis linearibus; pedicello medio articulato; perianthii albidi segmentis oblongo-lanceolatis, dorso trinervatis; sta-

minibus perianthio duplo brevioribus; stylo curvato, elongato; capsulis globosis; seminibus in loculo 2–3.

Fibri radicales graciles, duri. *Folia* pedalia et ultra, membranacea, supra basin 6–9 lin. lata, venis a costa utrinque 12–15 distinctis. *Scapi* 6–9-pollicares. *Racemi* semipedales et ultra. *Bracteæ* ante anthesin longe protrusæ, inferiores 9–12 lin. longæ. *Pedicelli* inferiores 5–6 lin. longi, ascendentes. *Perianthium* 6–8 lin. longum, segmentis medio $1\frac{1}{2}$ lin. latis. *Capsula* 4 lin. longa et lata, apice profunde emarginata.

Hab. Swamps of Rubuga country, *Col. Grant!* (*Chlorophytum*, sp., App. Speke's Journ. 649.)

A close ally of *C. longifolium*, Schweinfurth, from which it differs by its larger flower and bracts and longer pedicels, articulated at the middle.

[Grows to 20 inches in height, and is found in swamps at 5° 40′ S. lat., alt. 3800 feet; flowers (white) at the beginning of the year—J. A. G.]

Plate CIV. fig. 1. Detached flower with pedicel; fig. 2. The same, expanded; fig. 3. Pistil; fig. 4. Horizontal section of ovary.

8. Gloriosa virescens, Lindl. Bot. Mag. tab. 2539; App. Speke's Journ. 650.—*Methonica virescens*, Kunth, Bot. Mag. tab. 4938, excl. syn.

Hab. Zanzibar and Karagué, 3000–4000 feet. Common amongst thickets, *Col. Grant!*

[Flowers in March at Karagué, and in Zanzibar during September. Found clinging from the tendrils at the tips of the leaves. Flowers bright orange-yellow.—J. A. G.]

Asparagaceæ.

1. Sanseviera guineensis, Willd.; Kunth, Enum. v. 16.

Hab. On ant-heaps, Madi, Dec. 1862, *Col. Grant!* (*Sanseviera*, sp., App. Speke's Journ. 649.)

[6 to 8 feet high from the earth to the end of the flower-stalk. The stem has four distinct and several other grooves. The lower part of the flower-stalk has sheathing leaves, which are succulent, 4 feet long, and $1\frac{1}{2}$ inch across their bases, spotless, with entire edges. The flowers, in January, were dead and worm-eaten; but three to four grow on the angular portion of the stem along its whole length. The Waganda make beautiful white rope from its leaf-fibre; they pull the fibre through a flat stick and the dead stem of a plantain-tree till all juice has gone. This process is best done when the leaves have dried for a few days.—J. A. G.]

2. Dracæna elliptica, Thunb. ?—*D. javanica*, Kunth, Enum. v. 12 ?

Hab. Unyoro (leaf only), *Col. Grant!* (*Dracæna*, sp., App. Speke's Journ. 650.)

[During November, at Unyoro, amongst tropical vegetation, this was 10 to 15 feet high, in fruit, which clustered on the ends of the branches. Each fruit was a berry with an opaque seed. The Unyoro people make capital fences, 8 feet high, of its stems, called "m'popo m'weeto" (the wild beetle); but I did not see the resemblance.—J. A. G.]

3. Asparagus Pauli-Gulielmi, Solms, in Schweinf. Beitr. 203. Fruticosa, glabra; ramis gracillimis, elongatis, virgatis, interdum subscandentibus; spinis parvis, copiosis, uncinatis; cladodiis subulatis internodio longioribus solitariis vel geminis ad nodos floriferos sæpe obsoletis; floribus minutis, hermaphroditis, geminis; pedicellis flore longioribus, prope basin articulatis; perianthii segmentis oblongis.

Folia etiam ramulorum ultimorum basi in spinam parvam duram stramineam producta. *Internodia* suprema $1–1\frac{1}{2}$ lin. longa. *Cladodia* 2–4 lin. longa, erecta, stricta. *Pedicelli* patentes, $2\frac{1}{2}–3$ lin. longi. *Perianthium* 1 lin. longum.

Hab. Madi &c., common, Feb. 1862, *Col. Grant!* (*Asparagus*, sp., App. Speke's Journ. 650.) We have it also from Nubia, gathered by Petherick, from Guinea by Dalton, Irving, and Barter, and from Zambesi-land by Kirk.

[4 to 5 feet high, common, with graceful Araucaria outline and pretty white flowers (February); the honey-bee now covers it. Guinea-fowl eat its seeds, consequently called "m'solankanga" (Kin.). A variety, the "m'galamboottee" (Kis.), has long, uniform, opposite branches, which ascend trees by their thorns. The root is masticated with salt, and the liquid squirted into the mouth of those who are suffering from sore eyes.—J. A. G.]

Plate CV. fig. 1. Node, bearing a prickle, a cladode, and a pair of flowers; fig. 2. Single flower, opened out.

SMILACEÆ.

1. SMILAX KRAUSSIANA, Meissn.; Kunth, Enum. v. 242. Fruticosa, glabra; ramis angulatis, copiose aculeolatis; foliis breviter petiolatis simplicibus oblongis, obtusis vel subacutis, rigide coriaceis, lucidis, 5-nervatis; umbellis simplicibus, breviter pedunculatis; pedicellis flore 3–4plo longioribus; perianthii segmentis ligulatis, obtusis; antheris oblongis filamento triplo brevioribus.—*S. Morsaniana*, Kunth, Enum. v. 241.

Folia 2–5 poll. longa, 1–2½ poll. lata, in exemplis nostris ad apicem et basin late rotundata. *Petioli* 4–6 lin. longi, facie canaliculati, cirris infra medium exorti. *Umbellæ* floriferæ densæ, 6–9 lin. latæ. *Pedicelli* fructiferi 5–6 lin. longi. *Perianthium* 1½–2 lin. longum. *Bacca* globosa, 4–5 lin. crassa.

Hab. Madi, M'gomba, and M'dhoonwi, *Col. Grant!* We have it also from Guinea, Sierra Leone, Zanzibar, and Natal; and it may be doubted whether it be distinct from the Mascarene *S. anceps*, Willd.

[Rhizome compressed. "M'kolola," 3–4 feet high, growing in patches in open dry forest, clinging to any support by its pair of tendrils; the stem is thorned and dies every season; the dried leaves have a rich flavour of prunes; roots deeply imbedded and stem-like, with knots showing the growth of each year. The Wanyamezi use its roots medicinally.—J. A. G.]

Plate CVI. fig. 1. Male flower, open; fig. 2. A single stamen; fig. 3. A single female flower; fig. 4. Pistil; fig. 5. Cluster of berries; fig. 6. A single berry.

PONTEDERIACEÆ.

1. PONTEDERIA NATANS, Beauv.; Kunth, Enum. iv. 128.—*Monochoria natans*, App. Speke's Journ. 649.

Hab. Madi, floating in stagnant pools, *Col. Grant!*

[Grows in stagnant but clear water at 3° 15′ N. lat.; in flower (delicate blue) during December, and partly in seed. Seed-vessel six-celled, with numerous seeds. The submerged leaves under water, and those of young plants growing in the bottom of the pools, are linear; but the leaves which reach the surface and float on the water are cordate or kidney-form.—J. A. G.]

2. HETERANTHERA CALLÆFOLIA, Reich.; Kunth, Enum. iv. 123.—*H. Kotschyana*, Fenzl.

Hab. Madi, on mud, Dec. 1862, *Col. Grant!* (*Monochoria* no. 2, App. Speke's Journ. 649.)

[This grows in shallow water collected on the tops of the curious rocks about Madi. It flowers in December; they are white, with unequal petals. Root curved and with purple fibres. Capsule many-seeded.—J. A. G.]

COMMELYNACEÆ.

1. CYANOTIS HIRSUTA, Hochst., in Schimp. Pl. Abyss. no. 14.—*C. abyssinica*, A. Rich. Fl. Abyss. ii. 344, tab. 98; App. Speke's Journ. 650. *Zygomenes abyssinica*, Hassk., in Schweinf. Beitr. 211.

Hab. Common in moist dips of Ukidi forest, Nov. 1862, *Col. Grant!* also Abyssinia and Guinea.

[Found at 2½° N. lat. in November, when it was in flower and about 10 inches high.—J. A. G.]

2. Cyanotis longifolia, Benth. Flor. Nigr. 543; Walp. Ann. iii. 661.

Hab. Tura country, alt. 38000 feet, *Col. Grant!* Also Guinea.

[Found at 6° S. lat., alt. 3800 feet; in flower during December.—J. A. G.]

3. Commelyna latifolia, Hochst.; Walp. Ann. iii. 656; App. Speke's Journ. 650.

Hab. Common in rich soil, *Col. Grant.* (No specimen.)

[Lies flat on the ground, sending up branches from its jointed stem, whence suckers are formed. Stem round, hairy, full of watery fluid, with lines of green along its length. The general calyx or envelope contains three blue flowers surrounded by a watery jelly; after flowering, the envelope closes till the seeds are developed. The seed-vessel is six-celled; namely, three round cells are above three others; seeds four to six, roundish and oblong. The leaves are eaten as a vegetable. Common where the soil is rich or by water.—J. A. G.]

4. Commelyna communis, Linn.; Kunth, Enum. iv. 36.

Hab. Zanzibar, *Col. Grant!* (*Commelyna* no. 1, App. Speke's Journ. 650.)

[Grows in moderately moist places in the island of Zanzibar, where it was flowering in September. Flower sky-blue, delicate, and within a sheath; decumbent stem. The leaves are cooked and eaten by the natives.—J. A. G.]

5. Commelyna nigritana, Benth.; Walp. Ann. iii. 657.

Hab. Common in wet soil, Kazeh, *Col. Grant!* (*Commelyna* no. 2, App. Speke's Journ. 650.)

[15 to 20 inches high, with chocolate-coloured flowers; found in black soil at 5° 5′ S. lat., alt. 3600 feet. Common also near moisture.—J. A. G.]

6. Lamprodithyros rivularis, Hassk., in Schweinf. Beitr. 211.—*Aneilema rivulare*, A. Rich.; Walp. Ann. iii. 657.

Hab. Common in bogs, Ukidi, Nov. 1862, *Col. Grant!* (*Dithyrocarpus*, sp., App. Speke's Journ. 650.) Also Abyssinian.

[Common in bogs at 2½° N. lat.; flowers (lilac colour) in November.—J. A. G.]

7. Aneilema taccazeana, A. Rich.; Walp. Ann. iii. 658.—*Lamprodithyros taccazeana*, Hassk., in Schweinf. Beitr. 211.

Hab. Moist places, Mininga, April 1861, *Col. Grant!* (*Aneilema* no. 1, App. Speke's Journ. 650.) Also Abyssinian and very near the Guinea *A. lanceolatum*, Benth.

[Plant 10 to 20 inches high, near moist sandy ground, at 5° S. lat. and other localities. Flowers during April.—J. A. G.]

8. Aneilema longifolia, Hook. Exot. Flora, t. 204; Kunth, Enum. iv. 71.

Hab. In swamps, Tura country, *Col. Grant!* (*Aneilema* no. 2, App. Speke's Journ. 650.) Also Zanzibar, Zambesi-land, and Natal.

[Plant 15 inches high in the swamps at 6° S. lat., at 3800 feet altitude; flowers in December.—J. A. G.]

Flagellariaceæ.

1. Flagellaria indica, Linn.; Kunth, Enum. iii. 370; App. Speke's Journ. 650.

Hab. Banks of M'geta river, *Col. Grant.* Spread through tropics of Old World.

[The tips of its leaves are tendrils by which the plant ascends to the tops of the tallest trees; the stem is an inch thick. M'gæta river, 7° 20′ S. lat., in the month of October, when in seed.—J. A. G.]

MONOCOTYLEDONES GLUMIFERÆ. (By Professor OLIVER.)

CYPERACEÆ *.

1. CYPERUS FLAVESCENS, L.; Kunth, Enum. Pl. ii. 5; App. Speke's Journ. 653.

Hab. In tufts on the rocks, Madi, Dec. 1862, *Col. Grant!*

2. CYPERUS NITIDUS, Lam.; Bœckel., in Linnæa, xxxv. 461.—*C. lanceus*, Thunb.; App. Speke's Journ. 654.

Hab. 6° S. lat., Jan. 1861, *Col. Grant!*

Also at the Cape, our specimens from which are more robust than Col. Grant's.

3. CYPERUS LÆVIGATUS, L.; Bœckel., in Linnæa, xxxv. 486.—*C. mucronatus*, Rottb.; Kunth, Enum. Pl. ii. 17; App. Speke's Journ. 653.

Hab. Near Zungoméro, 7° 33′ S. lat., *Col. Grant.* Widely spread in both hemispheres.

[Found by the edge of a hot spring which bubbled up from the earth in fifty or sixty places, too hot for the hand. This plant, and no other vegetation, grew within arm's length of the bubbling water and under the influence of its heat.—J. A. G.]

4. CYPERUS CUSPIDATUS, Humb. et Kunth; Bœckel., in Linnæa, xxxv. 496.—*C. squarrosus*, App. Speke's Journ. 653.

Hab. Madi, on rocky heights, Dec. 1862. With a wide distribution in both hemispheres.

5. CYPERUS ARISTATUS, Rottb.; Kunth, Enum. Pl. ii. 23; App. Speke's Journ. 653 (in part).

Hab. Kazeh, 5° S. lat. 1860, *Col. Grant!* Widely spread in tropical countries.

6. CYPERUS GRANTII, Bœckel. MSS. in hb. Kew. Viridis; rhizomate brevi crasso, vaginis vetustis dissolutis brunneis obtecto; culmis (1–1$\frac{1}{3}$-ped.) evidenter trigonis, haud compressis, basin versus foliatis; foliis culmo brevioribus perlonge angustissime acuminatis; radiis ascendentibus bracteis anguste linearibus brevioribus; bracteis radiorum inferiorum 2–3$\frac{1}{2}$ poll. longis, ochreis, tranversim truncatis; spiculis capitato-confertis, lineari-lanceolatis oblongisve, 3–2 lin. longis; squamis lucidis oblongis, superne parum dilatatis, brevissime mucronulatis, mucrone recto, carina evidente, 3-nerviis, atro-sanguineis, concoloribus basi pallidiore.

Allied to *C. tenax*, Bœckel., in Linnæa, xxxv. 504, a South-African species.

Hab. 5° 6′ S. lat., alt. 3800 feet, sandy place near water (*Cyperus* no. 15, App. Speke's Journ. 654).

7. CYPERUS SPHÆROCEPHALUS, Vahl; Kunth, Enum. Pl. ii. 45.—*C. obtusiflorus*, Vahl, var. *flavissimus*, Bœckel., in Linnæa, xxxv. 529. Rhizomate lignoso crasso; culmo solitario, rigido, $\frac{1}{2}$–1-pedali, triangulari; foliis culmo brevioribus v. æquilongis attenuato-linearibus, margine obsolete scabriusculis lævibusve; foliis floralibus 4–5 patentibus, basi dilatatis, capitulum subglobosum amplectentibus; spiculis 8–15, sessilibus, ovato-oblongis, complanatis, aureis, obtusis, 12–18-floris, squamis dense imbricatis, ovato-lanceolatis, obtusiusculis, multinerviis.—App. Speke's Journ. 654.

Capitula 1 poll. lata. *Spiculæ* $\frac{1}{2}$–$\frac{2}{3}$ poll. longæ.

* I have gratefully to acknowledge the liberal and prompt assistance of Dr. O. Bœckeler in the determination of many of these Cyperaceæ.—D. O.

Hab. Alt. 4488 feet, 6° S. lat., *Col. Grant!* Also at the Cape. Reduced by Dr. Bœckeler to *C. obtusiflorus*, Vahl.

[Golden-yellow flowers. Grows at 4488 feet, 6° S., 1st January, 1861.—J. A. G.]

Plate CVIII. A. fig. 1. Flower and subtending glume; fig. 2. Stamens and pistil.

8. Cyperus Haspan, L., var. *indicus*, Bœckel., in Linnæa, xxxv. 574.

Hab. 2° N. lat. (*C. pulvinatus*, App. Speke's Journ. 653). A wide-spread species in both hemispheres.

[Grows in tufts in the marshes of Unyoro, Sept. 1862.—J. A. G.]

9. Cyperus denudatus, Vahl; Bœckel., in Linnæa, xxxv. 576; App. Speke's Journ. 654.

Hab. Near Kazeh, 5° 1′ S. lat., alt. 3960 feet, *Col. Grant!* And at the Cape.

[2 feet high, in bogs about Kazeh, at 5° 1′ S. lat. Common.—J. A. G.]

10. Cyperus reduncus, Hochst.; Bœckel., in Linnæa, xxxv. 580 (included under *C. aristatus* in App. Speke's Journ. 653).

Hab. Unyoro, in marshes, Nov. 1862, *Col. Grant!* Occurs also in Abyssinia and Nigritania.

11. Cyperus difformis, L.; Kunth, Enum. Pl. ii. 38; App. Speke's Journ. 653.

Hab. Madi, Dec. 1862, *Col. Grant!* Common in the Old-World tropics.

[6 inches high, moist ground, rocky heights of Madi, Dec. 1862; and 18 inches at Khartoom, 15° to 16° N. lat.—J. A. G.]

12. Cyperus articulatus, L.; Bœckel., in Linnæa, xxxvi. 274; App. Speke's Journ. 653.

Hab. By the Nile, 2° N. lat., *Col. Grant!* Widely spread in both hemispheres.

[2 to 3 feet high, Nile edges; in flower Nov. at 2° N. lat.—J. A. G.]

13. Cyperus longus, L.; Bœckel., in Linnæa, xxxvi. 279; App. Speke's Journ. 653.

Hab. By the Nile, 16° N. lat., April 1863, *Col. Grant!* Widely spread in temperate and subtropical regions of the Old World.

[3 feet high, collected at 16° N. lat. on the Nile, at the Gherri cataract. It grows profusely upon the rocks of the river about Wady Chumar, Bagære, &c.; also in the rocky Assua river, 3° 40′ N. lat. Our camels, after crossing the desert, devoured it greedily.—J. A. G.]

14. Cyperus rotundus, L.; Bœckel., in Linnæa, xxxvi. 283; App. Speke's Journ. 653.

Hab. Alt. 3800 feet, 5° 6′ S. lat., 30° E. long., *Col. Grant!* Generally dispersed through warm countries.

15. Cyperus papyrus, L.; Kunth, Enum. Pl. ii. 64.—*Papyrus antiquorum*, App. Speke's Journ. 654.

Hab. Morasses, Zanzibar Island; the shallow borders of lakes Victoria and Windermere are thickets of this rush, growing to 15 feet in height; Nile banks 4° 56′ N. lat.; not so much of it further north, *Col. Grant!*

[*Uses.*—The terminal tufts are eaten by the water-boc, and made into soft bedding at 1° 40′ S. lat.; the stem is made into screens; strips from the bark make beautiful fish-cruives; and at Unyoro a bundle of pith cut into long strips forms a wrapper or covers a jar.—J. A. G.]

I have not seen Col. Grant's specimens of this plant.

16. Cyperus alopecuroides, Rottb.; Bœckel., in Linnæa, xxxvi. 321; App. Speke's Journ. 653.

Hab. Karagué, March 1862, *Col. Grant.* Extending across Africa and eastwards through India.

[A rush, 8 feet high in the Windermere lake, Karagué; alt. 4000 feet. Used as a thatch to dwellings; and I think it is from this that the Wahia make their inferior salt; our men call it "magādee," or snuff: March 18, 1862.—J. A. G.]

17. Cyperus hemisphæricus, Bœckel., in Linnæa, xxxvi. 345.

Hab. East of the coast range, Oct. 1860 (*Mariscus* no. 2, App. Speke's Journ. 654). Collected by Peters and Hildebrandt in Eastern Africa.

18. Mariscus umbellatus, Vahl; Kunth, Enum. Pl. ii. 118; App. Speke's Journ. 654.

Hab. Karagué, Dec. 1861, and Uganda, July 1862, *Col. Grant!* A wide-spread species.

I prefer to leave this plant as determined in the Speke Supplement; but our specimens require careful revision by the light of Dr. Bœckeler's study of the group.

[Growing at 5500 feet alt. in lat. 1° 40′ S., Dec. 1861; also Uganda plantain-groves, July 1862, and the marshes of Unyoro. Salt prepared from its ashes.—J. A. G.]

19. Kyllingia melanosperma, Nees; Kunth, Enum. Pl. ii. 131; Bœckel., in Linnæa, xxxv. 419.

Hab. Madi, Dec. 1862 (*K. macrocephala*, App. Speke's Journ. 654), *Col. Grant!*

[Native name "keelolo," 18 to 24 inches in height by a rocky burn, Madi, December 15, 1862. Roots creeping and purplish, the whole plant sweetly perfumed; the stems have three distinct angles, and also a rib between each of the large angles. The roots are pounded by Wezee women and rubbed as a scent on their bodies.—J. A. G.]

20. Kyllingia leucocephala, Bœckel. MSS. in hb. Kew. Pluriculmis, haud stolonifera; radice fibrosa; culmis (8–12 poll.) gracilibus triangulis, sulcato-striatis, basin versus paucifoliatis; foliis rigidulis linearibus acuminatis, 3–5 poll. longis; capitulo subgloboso, $\frac{1}{2}$ poll. diam., involucro 2–4-phyllo, phyllis longioribus reflexis, 1–3 poll. longis; spiculis numerosissimis, dense congestis, 3-floris; floribus inferioribus 2 v. 1 fertilibus, squamis albidis concoloribus obtusiuscule apiculatis, margine hyalinis lævibus, carina exalata, floralibus subsexnerviis, basi decurrentibus; stylo pertenui bifido.

Hab. 6° 4′ S. lat., alt. 4068 feet, Dec. 1860 (*K. aurea*, App. Speke's Journ. 654), *Col. Grant.*

[Common in moist woods at the "Bass rock," alt. 4068 feet, December 28, 1860, lat. 6° 4′ S. Grows from 14 to 16 inches high.—J. A. G.]

21. Kyllingia sphærocephala, Bœckel. MSS. in hb. Kew. Stolonifera; culmis solitariis, elongatis, filiformibus, 9–12 poll. longis, infirmis, sulcato-striatis, basi foliatis; foliis culmo multo brevioribus, $\frac{1}{12}$–$\frac{1}{10}$ poll. latis; capitulo globoso perdenso, $\frac{1}{4}$ poll. diam.; involucri phyllis (2–3) patentibus perangustis, 1–2 poll. longis; spiculis densissime imbricatis, valde compressis, 1-floris; squamis floralibus tenuissime membranaceis concoloribus alutaceis, apice rectis, carina acuta exalata lævi, squama inferiore minore 10-nervia, vacua, superiore fertili subsexnervia; stylo vix exserto, complanato, breviter bifido.

Hab. Unyoro, Nov. 1862 (*Kyllingia* no. 2, in part, App. Speke's Journ. 654), *Col. Grant!*

22. Kyllingia bulbocaulis, Bœckel. MSS. in hb. Kew. Viridis v. glaucescens; fibrillis radicalibus tenuibus; culmo erecto, 5–6 poll. longo, basi valde bulboso-incrassato, vaginis emortuis fuscis valide nervosis tecto; foliis culmo plerumque multo longioribus, vaginis fissis, margine tenuissime membranaceo, albido; capitulo globoso-hemisphærico, 4–5 lin. lato; involucri phyllis 2–3 reflexis, longioribus 3–4 poll. longis, anguste linearibus; spiculis teretiusculis, leviter compressis, basi haud obliquis, 2-floris, flore tertio tabescente; squamis chartaceo-membranaceis, concoloribus, alutaceis v. stramineis, convexis, ecarinatis, subtiliter multi- (10-)nervosis.

Male flowers (3-androus) only were found by Dr. Bœckeler. I have not repeated an analysis.

Hab. Karagué, Dec. 1861 (*Kyllingia* no. 1, App. Speke's Journ. 654), and Zanzibar, *Col. Grant!*

[Found on a hill-top, alt. 5500 feet, at Karagué, by water and rock, the flowers in a white tuft.—J. A. G.]

23. Isolepis echinocephala, Oliv., sp. nov. Culmo erecto e rhizomate fibroso, triangulari, striato, glabro; foliis elongatis, anguste linearibus, glabris, glaucescentibus, margine apicem versus scabriusculis; umbella multiradiata, radiis divergentibus, brevibus, valde inæqualibus, v. capitulis sessilibus; involucro 6–9-phyllo, phyllis patentibus decurvisve, foliis basilaribus similibus, 2–12 poll. longis; spiculis ovoideis ellipticisve, capitato-congestis, multifloris; capitulis subglobosis; squamis ellipticis obtusis, dorso apice crasse mucronatis, mucrone erecto; staminibus 3; setis hypogynis 0; stylo sursum gracillimo, 2-fido; achænio ovali-oblongo, compresso, basi persistente styli rostrato.

Culmus $1\frac{1}{2}$–3-pedalis. *Folia* 1–2 ped. longa, $1\frac{1}{2}$–$2\frac{1}{2}$ lin. lata. *Capitula* 3–7 lin. diam.

Hab. By the Nile, 2° N. lat., and near Khartoum (*Cyperus* no. 3, App. Speke's Journ. 653), *Col. Grant!*

We have apparently the same plant from the Niger (Barter, no. 1068).

Plate CVII. fig. 1. Spikelet; fig. 2. Flower (two stamens remaining) and glume; fig. 3. Ovary.

24. Isolepis Bœckeleri, Oliv., sp. nov. Radice fibrosa; culmis erectis, firmis, 3–6 poll. longis, triangularibus, striatis, glabris, basi vaginis latis vetustis imbricatis quasi bulboso-dilatatis; foliis culmo longioribus, linearibus, longe acuminatis, glabris lævibusque, basi conduplicatis et late vaginatis; involucro 3–7-phyllo, phyllis foliaceis, patentibus v. decurvis, longioribus 4–5 poll. longis; spiculis compluribus capitato-confertis, sessilibus, ovali-oblongis, 3 lin. longis, 6-floris; squamis hyalino-membranaceis, plurinervosis, late ovatis lanceolatisve, obtusiusculis; caryopsi obovata v. late ellipsoidea, trigona, angulis obtusiusculis prominentibus, faciebus lævibus; stylo pertenui, basi æquali usque fere ad medium 3-fido.

Allied, according to Dr. Bœckeler, to *Isolepis expallescens*, Kunth, Enum. Pl. ii. 196, a Cape species.

Hab. Without any note of locality in Col. Grant's collection. It would appear to have been confounded with *Cyperus sphærocephalus*? in App. Speke's Journ. 654.

25. Isolepis Schweinfurthiana?, Bœckel., in Linnæa, xxxvi. 758 (*Scirpus*).

Hab. Mininga, April 1861 (*Trichelostylis* no. 1, App. Speke's Journ. 654).

I have not a type specimen at hand for comparison; but our specimen corresponds fairly with Dr. Bœckeler's careful description.

[8 to 9 inches high, an erect tuft, lat. 4° 18′ S., April 1861.—J. A. G.]

26. ISOLEPIS, sp. (*Isolepis Saviana* ?, App. Speke's Journ. 654). Too young to describe; apparently nearly allied to *Scirpus Hochstetteri*, Bœckel. Linnæa, xxxvi. 739 (*Fimbristylis pusilla*, Hochst. in hb. Schimp. Abyss. 796).

Hab. Unyoro, Sept. 1862, *Col. Grant.*

[Grows in marshes in tufts 3 to 4 inches high, September 1862, Unyoro.—J. A. G.]

27. ASCOLEPIS PROTEA, Welw., *β. bellidiflora*, Linn. Trans. xxvii. 76. "Capitula splendide nivea v. lactea, depresse hemisphærica, transversim 5–8, rarius 3–4 lin. lata, centro plerumque excavato. Squamæ floriferæ graciles, elongatulæ, lanceolatæ v. lineari-lanceolatæ, apicem versus subulatæ v. compresso-cylindricæ."—Welw. *l. c.*

Culmi 4–10 poll. longi, gracillimi. *Folia* angustissime linearia, 3–5 poll. longa.

Hab. 5° S. lat., alt. 3800 feet (*Antrolepis* no. 1, App. Speke's Journ. 654), *Col. Grant!* Also in Angola.

[Grows like the English daisy, 9 inches high, with a round stem. Found in rather moist ground, not common, near Wala river, lat. 5° 26′ S., alt. 3800 feet.—J. A. G.]

Plate CX. A. fig. 1. Flower and subtending glume; fig. 2. Same, glume removed; fig. 3. Ovary.

28. FIMBRISTYLIS HISPIDULA, Kunth, Enum. Pl. ii. 227.

Hab. Lat. 5° 55′ S., alt. 3700 feet, and Mininga, lat. 4° 18′ S. (*Trichelostylis* no. 2, App. Speke's Journ. 654), *Col. Grant!* Widely spread in Africa.

[Grows in erect tufts, 20 to 22 inches in length, by water, lat. 4° 18′ and 5° 55′ S., 1861. Flowers rust-colour.—J. A. G.]

29. FUIRENA aff. *F. pubescenti*, Kunth, Enum. Pl. ii. 182. Glabrata; culmo $1\frac{1}{4}$–$1\frac{1}{2}$ ped., apicem versus minutissime pubescente; squamis valide trinervosis, arista longiuscula, subrecurva.

Hab. 6° S. lat., Jan. 1861 (*F. pubescens*, App. Speke's Journ. 654).

This may prove a distinct species. It agrees with *F. pubescens* in general facies, but is more nearly glabrous, the scales of the spikelets are less hoary, and they are more strongly 3-nerved. The staminodia appear to be wanting, as in that species.

30. FUIRENA UMBELLATA, Rottb.; Kunth, Enum. Pl. ii. 185; App. Speke's Journ. 654.

A very robust form, with leaves sometimes nearly 1 inch broad.

Hab. Madi, Dec. 1862, *Col. Grant!*

[Found on the sandy edges of the burn at Madi in December 1862; the root a foot deep in water and sand, with rootlets growing from the joints. Stem 3 feet long, lodging like ripe corn, five-sided, its edges so sharp as to cut the shins in wading. Leaves almost completely sheathing the stems; their surfaces ribbed or crimped in a remarkable manner. Flowers in an ascending spire along the stem. Natives extract salt from its ashes, and call it "keekal'a."—J. A. G.]

31. FUIRENA LEPTOSTACHYA, Oliv., sp. nov. Pallide virens; culmis cæspitosis, pedalibus, striatis, glabris v. apicem versus pilosulis, paucifoliatis; foliis planis vaginisque pilosulis; pedunculis brevibus, spiculis dense capitato-congestis, lanceolato-oblongis, multifloris, 3 lin. longis; squamis late ellipticis, obtusis v. emarginatis, glabratis, obscure trinerviis, late-

ribus tenuibus; staminodiis 3, achænio æquilongis, apice abrupte dilatatis; stylo gracili, 3-fido; achænio obovoideo, trigono, basi styli mucronato.

Folia caulina linearia, 1–4 poll. longa, 2–2½ lin. lata. *Bractea* foliacea, patens.

Hab. Madi, Dec. 1862 (*Fuirena* no. 3, App. Speke's Journ. 654), *Col. Grant!*

[12 inches, in tufts where there is a swamp about Madi, at 3° 15′ N. lat., December 1862.—J. A. G.]

Plate CVIII. B. fig. 1. Spikelet; fig. 2. Flower and subtending glume; fig. 3. Ovary and staminodia.

32. Abildgaardia monostachya, Vahl; Kunth, Enum. Pl. ii. 247. Cæspitosa; pallide viridis v. glaucescens; culmo filiformi glabro foliis anguste lineari-filiformibus longiore; spicis solitariis v. geminis, ovato-oblongis, compressis, pallide stramineis; squamis late ovatis, carinatis, breviter mucronatis, nitentibus, carina subvirente; achænio globoso-pyriformi, trigono, tuberculato, pallide nitidulo.—App. Speke's Journ. 654.

Culmus 1–1½-pedalis. *Spica* semipollicaris.

Hab. Unyoro, grassy plateau, 2° N. lat., Nov. 1862, *Col. Grant!* Widely diffused in both hemispheres.

Plate CIX. A. fig. 1. Geminate spikes; fig. 2. Flower and glume; fig. 3. Pistil.

33. Abildgaardia pilosa, Nees; Kunth, Enum. Pl. ii. 248. Cæspitosa; culmo gracili, foliis longiore, striato, glabro, basi folioso; foliis anguste linearibus, subtus striatis, pilosulis; spicis 4–12, conferto-capitatis, oblongo-lanceolatis, acutis, compressiusculis, glabris, 5–6-floris; squamis ovato-lanceolatis, acute mucronatis, carinato-navicularibus, subtrinerviis; achænio globoso-pyriformi, trigono, lateribus transverse undulato-rugosis, styli trifidi basi persistente fusca coronato.—App. Speke's Journ. 654.

Culmus 1–2-pedalis. *Spica* 5–8 lin. longæ.

Hab. 5° S. lat., in forests near Kazeh, *Col. Grant!* Occurring westward in Guinea.

Plate CIX. B. fig. 1. Flower and glume; fig. 2. Ovary and style-base.

34. Lipocarpha argentea, R. Br.; Kunth, Enum. Pl. ii. 266; App. Speke's Journ. 654.

Hab. Madi. Dec. 1862, *Col. Grant!* Widely distributed in the tropics.

[12 inches high, in tufts by marshes, Madi, December 12, 1862, with flowers in a flat pyramid of several balls. Stem flatly round.—J. A. G.]

35. Scleria foliosa, Hochst.; A. Rich. Fl. Abyss. ii. 509.—Var. *major*. Culmis 1–2-pedalibus.

Hab. Marshes, Unyoro, Aug. 1862 (*Scleria* no. 2, App. Speke's Journ. 654).

I do not see any ground of specific distinction from the Abyssinian type.

36. Scleria racemosa, Poir., var.; Kunth, Enum. Pl. ii. 344. Culmo pluripedali, stricto, triangulari, glabro, angulis lævibus; foliis superioribus late linearibus, acuminatis, planis, nervosis, supra glabris, margine paginaque inferiore scabriusculis; ligula deltoidea. vagina trialata; paniculis erectis, laxiusculis, pluriramosis; pedunculis angulatis, hirto-scabridis; spiculis subsessilibus, masculis lanceolato-oblongis, obtusis, fere glabris, 2½–3 lin. longis; squamis subdistichis; antheris anguste linearibus, connectivo apicali subu-

lato, rubro-brunneo; caryopsi exserta, maxima, ovoidea, styli basi rigida anguste conica coronata, lævi, nitida, fuscescente v. grisea, basi perigynio crassiusculo undulato ciliolato arcte cincta.

Hab. Madi, Jan. 1863 (*Scleria* no. 1, App. Speke's Journ. 654), *Col. Grant!*

[Grows 7 feet high in an erect dense mass by burn-side, Madi, January 1863, when the seeds are ripe and resemble diminutive acorns. Leaf-edges sharp as razors.—J. A. G.]

Plate CXI. fig. 1. Male spikelet; fig. 2. Glume and stamens; fig. 3. Female spikelet; fig. 4. Pistil and perigynium; fig. 5. Fruit.

37. Scleria glomerulata, Oliv., sp. nov. Semipedalis, glabrata v. parce pilosula; radice fibrosa, fibrillis purpurascentibus; culmis pluribus fasciculatis, triangularibus fere glabris; foliis anguste linearibus, lævibus; spica $1\frac{1}{2}$–4 poll. longa, spiculis pluribus masculis cum fœmineis intermixtis, dense fasciculatis; bracteis setaceis, inferioribus spiculas superantibus; squamis ovatis, acuminatis v. ovato-lanceolatis, dorso apicem versus laxe hirsuto-pilosis; caryopsi albida, obovoidea, obtuse trigona, breviter apiculata, transversim undulato- v. plicato-rugosa; perigynio brevissimo, trigono, cupuliformi, persistente.

Hab. Madi, Dec. 1862 (*Scleria* no. 3, App. Speke's Journ. 654), *Col. Grant!*

[A tufted plant, 6 inches high, with red-purple rootlets, found in the débris of Madi rocks or crevices (December 1862). Stem erect, three-cornered, hairy. Whole plant delicately and sweetly scented. Seeds small, three-cornered, white, rough-surfaced, and milky.—J. A. G.]

Plate CX. B. fig. 1. Spikelet; fig. 2. Pistillate and staminate flowers; fig. 3. Stamen; fig. 4. Caryopsis.

38. Diplacrum pygmæum, Nees; Bœckel., in Linnæa, xxxviii. 434.

Hab. Madi, Dec. 1862 (*D. caricinum*, App. Speke's Journ. 654), *Col. Grant!*

A very pygmy form indeed.

[An inch in height, bushy, and growing (December) in the light soil about Madi, 1862.—J. A. G.]

Gramineæ.

1. Oryza sativa, L.; Kunth, Enum. Pl. i. 7; App. Speke's Journ. 651.

An unawned variety.

Hab. Zungomeno, 7° 27′ S. lat., *Col Grant!*

[Rice is cultivated by the natives near the coast and by traders, who have imported it as far as Unyamezi; but it was never met with on the route north of this, and the want of it was severely felt.—. A. G.]

2. Eriochloa, sp. near *E. annulata*, Kunth, Enum. Pl. i. 73.—*Helopus annulatus*, App. Speke's Journ. 652.

Hab. 5° 5′ S. lat., alt. 3600 feet.

[3 to 4 feet high, growing near water at lat. 5° 5′ S. Black stigmas.—J. A. G.]

3. Panicum Braunii, Steud. Syn. Gram. 93.—*Tricholæna fragilis*, A. Braun, in Flora, 841, 275. *Tricholæna* no. 1, App. Speke's Journ. 652.

[3 feet high, here and there along the paths. Flowers rich pink, very handsome. Lat. 5° S., alt. 2980 feet—J. A. G.]

4. Panicum (§ Brachiaria, Trin.) brizanthum, Hochst.; Steud. Syn. Gram. 63. —Var. *latifolium*. Culmo decumbente, 3–4-pedali, striato; foliis lineari-lanceolatis, 3–5 poll. longis, $\frac{1}{2}$–$\frac{5}{8}$ poll. latis, margine cartilagineo setuloso-dentatis, sparsim pilosis glabra-

tisve; vaginis pilis patentibus basi tuberculatis sparsim obsitis; racemis 4–5, alternis, secundis, 2–2½ poll. longis, interstitiis longioribus; spiculis solitariis, ellipsoideis v. ovoideo-oblongis, 2–2½ lin. longis; gluma inferiore late ovata, spiculam subamplectente, obtusiuscula, concava, 9-nervosa, lineam longa, gluma secunda membranacea, late ovata, obtusiuscula, 7-nervosa, dorso pilosa.

Hab. Unyoro, Nov. 1862 (*Panicum* no. 2; App. Speke's Journ. 652). Also in Abyssinia.

[3 feet high, on Unyoro plateau, at 2° N. lat.—J. A. G.]

Plate CXII. A. fig. 1. Spikelet; fig. 2. Same, detached, staminate flower exposed; fig. 3. Pistil.

[2 to 2½ feet high. Growing about corn-fields at 1° 40′ S. lat., March 1862.—J. A. G.]

A grass, perhaps identical with the above, was gathered at Karagué, March 1862 (*Panicum* no. 1, App. Speke's Journ. 652).

5. Panicum maximum, Jacq.; Steud. Syn. Gram. 72, var. *hirsutissimum.—P. hirsutissimum*, Steud. *l. c.* 72.

Hab. 5° S. lat., *Col. Grant!* (*Panicum* no. 5, App. Speke's Journ. 652.)

Similar to (but much taller and with larger panicle) a specimen determined by Gen. Munro from the Cape.

[A very handsome large head of dark flowers; two often growing from the same stem. Found abundant on the banks of the Kwaleh river, 5° S. lat., where it grows from 6 to 8 feet high.—J. A. G.]

6. Panicum (Digitaria) sanguinale, L.; Kunth, Enum. Pl. i. 82; App. Speke's Journ. 652.

Hab. Uganda, July 1862, *Col. Grant!*

A very widely diffused grass in warm and tropical countries.

[Branches a foot or two long and straggling. Found in July on the waste grounds of Uganda, 1862. —J. A. G.]

7. Panicum (Digitaria) muticum, Forsk.; Kunth, Enum. Pl. i. 93.—*Digitaria* no. 2, App. Speke's Journ. 652.

Hab. Karagué, March 1862, *Col. Grant!* Also in Abyssinia and Arabia.

[Collected in flower during March at Karagué in 1862. A foot high, common, erect. The branches start immediately close to the roots, which creep along the ground. It is said to be a remarkable grass for sweetness. Donkeys search eagerly for it, and eat of it greedily.—J. A. G.]

8. Panicum Crus-galli, Linn.—*Oplismenus Crus-galli*, Kunth, Enum. Pl. i. 143; App. Speke's Journ. 652.

Hab. Unyoro, August 1862, *Col. Grant!* Common in tropical countries.

[Grows 3 to 5 feet high in the Unyoro marshes, along with *Mimosa asperata, Blumea, Hibiscus, Peucedanum*, &c. Stem smooth in both directions. It rests three or four feet on the ground, then shoots seven feet higher. Leaves 2 spans long and ⅜ inch wide. The panicle is a rich cluster of seeds with purplish scales. Both edges of the lower parts of the leaves are jagged, but become at their extremities and on their surfaces like fine files. It is not a common plant; to be found in marshes, Sept. 1862. Small plants were observed to have their leaves barred across with zebra-markings at intervals of ⅜ inch, with pink edges.—J. A. G.]

9. Panicum colonum, Linn.—*Oplismenus colonus*, H., B., & K.; Kunth, Enum. Pl. i. 142; App. Speke's Journ. 652.

Hab. Nile, banks, 16° N. lat., April 1863, *Col. Grant!* A common grass of warmer regions of the Old World.

10. Panicum glaucum, Linn.—*Setaria glauca,* Beauv.; Kunth, Enum. Pl. i. 149; App. Speke's Journ. 652.

Hab. Unyanyembé, near Kazeh, *Col. Grant!* Wide-spread in tropical countries.

[Found thinly spread over the Unyamezi forest where there was water. Flower-heads brilliant gold-colour. The stem and leaves, as they grow from the root, are curiously compressed, after which they spread out much. Height averages 16 inches.—J. A. G.]

11. Panicum chrysanthum, Steud. Syn. Gram. 50.—*Setaria aurea,* Hochst., in hb. Schimp. Abyss.; App. Speke's Journ. 652.

Hab. Unyoro, Nov. 1862, *Col. Grant!* Also from Abyssinia &c. I doubt the specific distinctness of this plant.

[16 inches high along the paths. It is liable to small fungi, which are eaten by the natives at 2° N. lat., Nov. 1862—.J. A. G.]

12. Panicum verticillatum, Linn.—*Setaria verticillata,* Beauv.; Kunth, Enum. Pl. i. 152; App. Speke's Journ. 652.

Hab. Unyoro, Nov. 1862, *Col. Grant!* A wide-spread weed of warm countries.

[An abominable weed with a creeping root, which may be pulled up for five feet. The flowers stick bodily to the clothes; and cattle are said to die from eating of it. A section of the stem has the form of a convex lens.—J. A. G.]

13. Panicum no. 3 & no. 4, App. Speke's Journ. 652, must for the present, in the absence of authentic material for comparison, remain undetermined.

14. Pennisetum polystachyum, Schult. Mant. ii. 456; App. Speke's Journ. 652.

Hab. East of the coast range, Oct. 1860, *Col. Grant!* Apparently a widely spread species in tropical Africa.

[Upwards of 2 feet in height, growing on the east-coast range, October 1860.—J. A. G.]

15. Pennisetum Benthami, Steud. Syn. Gram. 105. Culmo elato, 6–10-pedali; vaginis striatis, glabris v. sparse pilosis; foliis inferioribus 2–3 ped. longis, 1–1¼ poll. latis, supra scabris sæpe pilosis, ad oras vaginarum barbatis; spica cylindrica, densa, interdum elongata; rhachi pilosa; spiculis patentibus; involucri setis inæqualibus, flores superantibus; gluma inferiore minuta, ovata, ½–⅝ lin. longa, superiore lanceolata, breviter aristata; gluma floris 5-nervia, palea ovali-lanceolata, acuminata, 2-dentata.—App. Speke's Journ. 652. *P. macrostachyum,* Benth. Fl. Nigrit. 563.

Hab. Madi, Dec. 1862, *Col. Grant!*

[Reed by water, Madi, Dec. 17, 1862. Now ripe, strong-stemmed, and 10 feet high. Flower-head in the form of a fox's brush.

Name and uses:—"Maweengo-weengo" (Kin.). The tall fences surrounding the residences of the Waganda king and people are of this useful reed; the interiors of all Waganda houses are walled into compartments by it. A strip from it is so sharp that it is used for cutting up meat, and also for cutting into fragments the victims of the king of Uganda.—J. A. G.]

16. Penicillaria spicata, Willd.; Kunth, Enum. Pl. i. 165; App. Speke's Journ. 652.

Hab. The "Bajra;" seen only on the coast; not cultivated in the interior, *Col. Grant.*

I have not seen any specimen.

17. ARISTIDA GRACILLIMA, Oliv., sp. nov. Cæspitosa; culmis 2–3 ped. altis, teretibus, glabris; foliis anguste linearibus, apice longe attenuatis, vaginisque, ore albido-piloso barbato excepto, glabris; panicula pedali, subpatula, radiis gracilibus lævibus adscendentibus ramosis; glumis flosculo longioribus, inæqualibus, 1-nerviis, inferiore fusco-purpurascente, $\frac{1}{4}$ poll. longa, oblongo-lanceolata, secunda $\frac{1}{2}$-pollicari, lineari, longe acuminata; gluma floris subhyalina, 3-nervia; arista profunde 3-fida, elongata, 2–3-pollicari.

Hab. Mininga, May 1861 (*Aristida*, nov. sp., App. Speke's Journ. 653).

[A very elegant grass, 3 feet high, ripe and found near cultivation in May 1861, at 4° 18′ S. lat.—J. A. G.]

Plate CXIV. fig. 1. Spikelet, enlarged; fig. 2. Floret, laid open.

18. SPOROBOLUS ELONGATUS, R. Br.; Kunth, Enum. Pl. i. 212.—*Sporobolus* nos. 1 & 2, App. Speke's Journ. 653.

Hab. Near Kazeh, Karagué, and Uganda, *Col. Grant!* A widely spread grass in the Old World.

19. PHRAGMITES COMMUNIS, Trin.; Kunth, Enum. Pl. i. 251.—*Arundo phragmites*, L., App. Speke's Journ. 653.

Hab. From 4° 55′ N. lat. and northward, *Col. Grant!* A cosmopolitan species.

[Reed in Unyoro marshes, 21st Sept. 1862. Not in flower. 8 feet high, erect, round stem, tubular between the joints. Leaves 2 spans long, 2 inches broad at their bases, stiff, smooth, not filed at their edges or on their surfaces, alternate, their bases clasp the stem, and grow regularly in one plane from the right and left sides only.

Native name and uses:—"Matætæ." The flutes and whistles of the Waganda are made of this reed. It is said to grow as thick as the arm in Nyassa, 11° S. lat., where the natives make a fence of it. Small thin lengths of it would suit admirably for the pens used by East-Indians to write Arabic and Hindi. It extends in one great sea for 1100 miles north of 4° 55′ N. lat.—J. A. G.]

20. MICROCHLOA SETACEA, R. Br.; Kunth, Enum. Pl. i. 258; App. Speke's Journ. 653.

Hab. 5° 5′ S. lat., *Col. Grant!* Widely spread in both hemispheres.

[16 to 18 inches long. Found in lat. 5° 5′ S., alt. 3600 feet, in light sandy soil near water.—J. A. G.]

21. CYNODON DACTYLON, Pers.; Kunth, Enum. Pl. i. 259; App. Speke's Journ. 653.

Hab. 5° S. lat. to 2° N. lat., *Col. Grant!* A cosmopolitan weed.

[Observed from 5° S. to 2° N. lat. The natives at the latter place use this grass as their only bedding, placing it on the floors of their huts. Cattle choose it of all others.—J. A. G.]

22. DACTYLOCTENIUM ÆGYPTIACUM, Willd.; Kunth, Enum. Pl. i. 261; App. Speke's Journ. 653.

Hab. 5° S. lat. &c., *Col. Grant!* A common tropical grass.

[Grows 2½ feet high. Dense crops of it, in waste ground and upon the flat roofs of the Arabs' houses, in Unyanyembe, Kazeh, 5° S. lat. The poorer starved people gather the ears of this grass, dry them in the sun, beat out the grain (extremely small) on surface rocks, grind it, and make the flour into stirabout eaten with mushrooms. Ripe in February.—J. A. G.]

23. CHLORIS COMPRESSA, DC. Cat. Hort. Monsp. 94.—*C. meccana*, App. Speke's Journ. 653.

Hab. Uganda, July 1862, *Col. Grant !*

This grass appears specifically identical with a Zambesi-land specimen labelled *C. compressa,* DC., by Gen. Munro.

[Grows in bunches 3 to 4 feet high in July on the equator, sending out long stretchers. It is a rather sensitive plant, the rays of the panicle closing after being gathered. Stem flattened at the lower joints; awns purple-tinted.—J. A. G.]

24. CHLORIS GAYANA, Kunth, Enum. Pl. i. 267, var.—*Chloris* no. 2, App. Speke's Journ. 653.

Hab. Unyoro, Nov. 1862, *Col. Grant !* Occurs in Senegal.

[2 to 2½ feet high. Common by the huts at 2° N. lat., and ripe in November.—J. A. G.]

25. ELEUSINE CORACANA, Gærtn.; Kunth, Enum. Pl. i. 273; App. Speke's Journ. 653.

Hab. Cultivated everywhere, *Col. Grant !* Widely spread in the Old World.

["Nagli" of India, "murwa" and "ooleyzee" of the African interior. Cultivated everywhere for its grain, sometimes in ridges with Indian corn, and at other times, as in the Himalayas, broadcast. Its flour, if soaked for a night in water, makes fair unleavened cakes. A coarse bitter-tasting beer, or "pombe," is made by mixing it with *Sorghum.* Stirabout is also made from it; and in the preparation of plantain-wine, if its parched grain be added, the wine has a pleasant taste of chocolate. It is ripe during December at 3° 15′ N. lat.—J. A. G.]

26. ELEUSINE INDICA, Gært.; Kunth, Enum. Pl. i. 272; App. Speke's Journ. 653.

Hab. 5° S. lat., alt. 3900 feet, *Col. Grant !* A common tropical weed.

[Grows generally in tufts 2 feet high, at 5° (alt. 3900 feet) and 2° S. lat. (at elevations from 4000 to 5000 feet). The grass is remarkably tough and strong; but I was assured by the natives that it is one of their most esteemed grasses for cattle, who are extremely fond of it.—J. A. G.]

27. TRISTACHYA LEUCOTHRIX, Trin.; Kunth, Enum. Pl. i. 308. Culmo 1½–3-pedali, erecto, superne nudo; foliis linearibus acuminatis, utrinque pilosis v. pagina superiore glabrata, vaginis striatis, inferioribus plus minus pilosis; ramis paniculæ racemiformis simplicibus v. 1–2-fidis; gluma inferiore lineari-lanceolata, acuminata, ¾ poll. longa, 3-costata, costis tuberculis nigrescentibus piliferis obsitis, pilis patentibus albidis, secunda 1–1¼ poll. longa, 3-nervia, nervis lateralibus tuberculalatis; fl. inferiore ♂, gluma dorso rotundato aristata, tuberculis paucis piliferis intramarginalibus obsita; fl. ⚥ superiore stipitato, stipite 1½–2 lin. longo, sericeo, gluma floris 7–9-nervia, profunde bifida, longe aristata.

Hab. 5° 26′ S. lat., alt. 3800 feet (*Anthistiria* no. 1, App. Speke's Journ. 652). Also at the Cape.

[2 feet high when ripe, gathered January 16, 1861, near Tura Nullah, in sandy soil, lat. 5° 26′ S., long. about 33° E., alt. 3800 feet.—J. A. G.]

Plate CXV. B. fig. 1. Ternate spikelets; fig. 2. Whorl of three outer glumes of same; fig. 3. Single detached 2-flowered spikelet; fig. 4. Stipitate hermaphrodite floret; of the two unnumbered figures, the upper one represents a ♂ floret, the lower one the sexual organs of an ⚥ floret.

28. ERAGROSTIS MEGASTACHYA (Koel.); Kunth, Enum. Pl. i. 333; App. Speke's Journ. 653.

Hab. 5°–6° S. lat.; Unyoro and by the Nile, 16° N. lat., *Col. Grant!* A common tropical grass.

[Collected 15th October, at 2° N. lat., in flower, and also at 16° N. lat., amongst *Sesamum* plants. Grows 2 to 2½ feet high, with an elegant silver-grey head.—J. A. G.]

29. Eragrostis cynosuroides (Retz.); Kunth, Enum. Pl. i. 327; App. Speke's Journ. 653.

Hab. By the Nile, 16°–17° N. lat., *Col. Grant!* Also in Egypt, and eastward in India.

[This coarse grass lines the sandbanks of the Nile at 16°–17° N. lat., and was ripe during April. It grows 2 to 3 feet high, and would grow higher. I saw the people of "Ab'idy," on the Nile, making it into a rope, which seemed very tough. The plant helps here to bind the sands on the banks of the river. —J. A. G.]

30. Eragrostis patens, Oliv., sp. nov. Cæspitosa; culmis decumbentibus firmulis, teretibus, leviter striatis, ½–1 ped. longis; foliis linearibus acuminatis, planis, superne parcissime pilosis v. glabris, vaginis glabris ore laxe piloso; panicula interrupte spicæformi, sæpe oblonga et obtusa, spiculis linearibus, 20–30-floris, dense fasciculatis, deinde patentibus ½–1 poll. longis; gluma floris ovato-elliptica, mucronata, 3-nervia; palea 2-carinata, obtusa, ciliata, persistente; staminibus 3.

Hab. Unyoro, Aug. 1862 (*Eragrostis* no. 4, App. Speke's Journ. 653), *Col. Grant!* Nearly allied to *E. Chapelieri* (Kunth).

[This is a fine bushy plant, a foot or so high, growing by the paths at 2° N. lat., flowering in August. Its habit is to grow in tufts.—J. A. G.]

Plate CXIII. fig. 1. Spikelet; fig. 2. Floret.

31. Eragrostis nutans? (Roxb.), Fl. Ind. 335.

Hab. Right bank of Nile, 16° N. lat. (*Eragrostis* no. 2, App. Speke's Journ. 653), *Col. Grant!*

[This was collected, when about ripe, in the middle of April, on the right bank of the Nile, near Mount Royan, at 16° N. lat. Average height 9 inches.—J. A. G.]

32. Eragrostis congesta, Oliv., sp. nov. Cæspitosa, radice fibrosa; culmo suberecto v. decumbente, 1½–2-pedali, superne nudo, tereti, striato, pilosulo; foliis linearibus, planis, acuminatis, plus minus pilosis; paniculæ spiciformis interruptæ rhachi ½–¾ ped. longa, recta, pilosula, obsolete punctato-tuberculata, spiculis in nodis dense congestis sessilibus v. subsessilibus, ovali-oblongis, 9–15-floris, gluma floris late ovato-elliptica, apiculata, 3-nervia.

Hab. Boggy ground near Kazeh, 5° S. lat. (*Eragrostis* no. 3, App. Speke's Journ. 653), *Col. Grant!*

Plate CXV. A. fig. 1. Spikelet; fig. 2. Detached floret; fig. 3. Flowering glume.

33. Manisuris granularis, Swartz; Kunth, Enum. Pl. i. 469; App. Speke's Journ. 652.

Hab. "Common weed, 2–3 feet high, in the fields of Unyoro," Nov. 1862, *Col. Grant!*

34. Vossia procera, Wall. et Griffith, in Journ. As. Soc. Bengal, v. (1836) 573,

tab. 23. Pallide viridis v. glaucescens; "culmis immersis, longissimis, crassis, cellulosis, radiculas capillaceas emittentibus, emersis 3–4-pedalibus, vaginis laxis compressiusculis tectis;" foliis linearibus acuminatis, pagina superiore marginibusque antrorsum scabridis, spicis terminalibus 2–4–6.—App. Speke's Journ. 652.—*Ischæmum cuspidatum*, Roxb. Fl. Ind. i. 324.

Spicæ $\frac{1}{2}$–$\frac{3}{4}$ ped. longæ. *Gluma* inferior, cum arista rigida antrorsum setulosa, $\frac{3}{4}$–1 poll. longa, superior brevior apiculata.

Hab. Unyoro, Nov. 1862, *Col. Grant!* Occurs also in Zambesi-land and India.

[Found ripe in the still back-waters of the Nile at Unyoro, November 1862.—J. A. G.]

Plate CXVI. Fig. 1. Lower spikelet; fig. 2. Upper spikelet; fig. 3. Hermaphrodite floret; fig. 4. Pistil.

35. Perotis latifolia, Ait.; Kunth, Enum. Pl. i. 470; App. Speke's Journ. 651.

Hab. Uganda, July 1862, *Col. Grant!*

[Grows 3 feet high, the leaves and branches crowded together, in the plantain-groves of Uganda. In flower during July. Leaves a dull deep green colour, fringed with hooked hairs, and the awns rich purple.—J. A. G.]

36. Pogonatherum ?, sp., App. Speke's Journ. 652. Not determinable in the absence of inflorescence.

Hab. Unyoro, Aug. 1862. "This, or a variety, grows submerged in a perfect network, which supports a man or water-boc as they plunge through it."—*Col. Grant!*

37. Anthistiria, sp.? (*Stipa*, nov. sp., App. Speke's Journ. 653). Panicle in *facies* nearly resembling *A. Barteri*, Munro, MSS. in hb. Kew (*Androscepia Barteri*, Anderss.).

[This is the jungle-grass in lat. 3° 10′ N., where, in December 1862, it was nearly 3 feet high.—J. A. G.]

38. Anthistiria ciliata, L.; Kunth, Enum. Pl. i. 481; App. Speke's Journ. 652.

Hab. 5° 5′ S. lat., alt. 3600 feet, *Col. Grant!* A common grass of Africa and tropical Asia.

[30 inches in height, growing under trees in rich low ground, very healthy and luxuriant. The natives collect its grain as food when there is a famine. Lat. 5° 5′ S.—J. A. G.]

39. Anthistiria ciliata, L., var. *imberbis* (Retz., Kunth, *l. c.*); App. Speke's Journ. 652.

Hab. Karagué, Dec. 1861, *Col. Grant!*

[This grass, averaging 2–2½ feet, waves like corn-fields, completely clothing the smooth-surfaced treeless summits of hills in Karagué, alt. 5000–5400 feet. Cattle will pass it and not even look at it; they will not graze upon it, but run down hill to what they get nearer the lake. Its roots are strong and almost woody.—J. A. G.]

40. Andropogon eucomus, Nees; Steud. Syn. Gram. 390. So determined in App. Speke's Journ. 652.

Hab. 5° S. lat., alt. 3960 feet, *Col. Grant!*

[2 feet high, with a cottony flower. Collected in February, in a marsh at 5° S. lat., alt. 3960 feet.—J. A. G.]

41. Andropogon, sp., an *A. altissimus*, Hochst.?—*A. fulvicomus*, Hochst.; Steud. Syn. Gram. 384.

Hab. 5° 5′ S. lat., alt. 3600 feet (*Andropogon* no. 3, App. Speke's Journ. 652), *Col. Grant!*

[Nearly 3 feet in height, with pink-purple stems. Stigmas rusty. Found by moisture at lat. 5° 5′ S., alt. 3600 feet, where the poor people gather its grain as food.—J. A. G.]

42. Andropogon hirtus, L.; Kunth, Enum. Pl. i. 492.

Hab. By the Nile, about 5° N. lat., March 1863. (*Cymbopogon hirtus*, App. Speke's Journ. 652.) A wide-spread grass of the Old-World tropics.

[From 2 to 3 feet in height, on the banks of the Nile, at 5° N. lat., March 1863, in flower.—J. A. G.]

43. Andropogon finitimus, Hochst. So determined in App. Speke's Journ. 652 (under *Cymbopogon* no. 1).

It much resembles that species, which was originally described from Abyssinia. *A. filipendulinus*, Hochst., which we have from Nigritania, Gen. Munro thinks may be identical.

[6 to 7 feet high, covering, in July, the flat sporting-grounds on the equator and further north for two degrees. Its awn is quite 2 inches long, and the stem is almost solid or woody.—J. A. G.]

44. Andropogon cymbarius, L. Mant. 303.—*Var.* bracteis 5–7 lin. longis.

Hab. Gani, 3° N. lat. (*Cymbopogon cymbarius*, var., App. Speke's Journ. 652.) Also in South Africa and India.

[6 feet high, growing richly, with its fine head of flowers, under the shade of the trees which thrive with luxuriance upon the rocky heights of Gani at 3° N. lat., in December.—J. A. G.]

45. Andropogon no. 4, App. Speke's Journ. 652, and "Erianthus aureus? Nees," App. Speke's Journ. 652, I leave undetermined.

[2 feet high, with rather round leaves, their edges hairy. Flowers are stiff and erect in March, at lat. 1° 40′ S.—J. A. G.]

Besides the above, Col. Grant observed a bamboo (App. Speke's Journ. 653, of which I have not seen specimens), a sorghum, Indian corn ("plentiful from 7° 20′ to 4° S. lat., but very rare towards the equator, and quite unknown beyond it northwards to 5° N. lat."), sugar-cane ("seen only on and about the equator, the red-stalked variety most frequent; they make no further use of it than eating the cane"), a second species of *Saccharum*?, not in flower (used as thatch in Uganda and Unyoro), and wheat ("never met with from Zanzibar to 15° 30′ N. lat., where it is cultivated by irrigation").

[We found the wheat or "Caffre corn" cultivated from 7° S. to 5° N. lat. It is called "jowaree" (Kis.), "m'tama" (Kin.), and "doora" (Egypt). A coarse, bitter, red variety is principally used because birds are not so destructive to it as to the better white grain. The African makes his "pombe" (beer) from it. The Waganda ferment their plantain-wine with the grain parched and made into flour; and the excellent bread of the Egyptians is made of the finer kind.—J. A. G.]

FILICES &c. (By J. G. Baker.)

1. Asplenium furcatum, Thunb.; Hook. & Baker, Syn. Fil. 214; App. Speke's Journ. 654.

Hab. Collected in December at 3° 15′ N. lat., *Col. Grant!* Throughout tropical and subtropical regions.

2. Actiniopteris radiata, Link; Hook. & Baker, Syn. Fil. 246; App. Speke's Journ. 654.

Hab. Gathered 11th January in the rather fertile country of Unyamezi, 5° S. lat., *Col. Grant!* Tropical Africa and Asia.

3. NEPHRODIUM UNITUM, R. Br., var. *propinquum*, App. Speke's Journ. 654.

Hab. Gathered in November at 2° to 3° N. lat., *Col. Grant!* Common in tropical and subtropical countries.

4. NEPHROLEPIS CORDIFOLIA, Presl; Hook. & Baker, Syn. Fil. 300.—*N. tuberosa*, App. Speke's Journ. 654.

Hab. Collected in December at 3° 15′ N. lat., *Col. Grant!* Tropical and subtropical regions.

5. POLYPODIUM PHYMATODES, L.; Hook. & Baker, Syn. Fil. 364.—*Phymatodes vulgaris*, App. Speke's Journ. 654.

Hab. Zanzibar, *Col. Grant!* Tropics of Old World.

6. CERATOPTERIS THALICTROIDES, Brongn.; Hook. & Baker, Syn. Fil. 174; App. Speke's Journ. 654.

Hab. 3° 15′ N. lat., *Col. Grant!* Common fern of warm countries.

[Found in a bog at Madi in January, growing in tufts amongst thick grass, and observed nowhere else on our route. The transverse section of the stem near the root shows a black circle and a diameter of tubes. The whole plant smells of our bracken or brake-fern.—J. A. G.]

7. MARSILEA DIFFUSA, Leprieur *fide* A. Braun.—*M. quadrifolia*, App. Speke's Journ. 654.

Hab. Nile, 9th March, 1863, *Col. Grant!* A widely spread species in Africa and Madagascar.

8. SELAGINELLA RUPESTRIS, Spring.—*Lycopodium rupestre*, App. Speke's Journ. 654.

Hab. Madi, Nov., *Col. Grant!* Cosmopolitan.

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ADDENDA. BY COL. GRANT.

The two following species were accidentally omitted under their proper heads in the preceding enumeration.

Compositæ.

Notonia Grantii, Oliv. & Hiern, Fl. Trop. Afr. iii. (ined.).—*Kleinia*? sp., App. Speke's Journ. 638.

Hab. M'bŭmi, 6° 56′ S. lat., *Col. Grant!*

Liliaceæ.

Ornithogalum Ekloni, Schlecht.; Baker, in Journ. Linn. Soc. xiii. 276.—*Scilla*, sp., App. Speke's Journ. 649.

Palmæ.

The following Palms were observed during the expedition and identified; but no specimens having been brought to Kew, they were not included in the enumeration.

1. Phœnix, sp. Wild Date. Clusters of them were seen growing on the hill-sides, 30–40 feet high, with pendent bunches of Indian-red fruit, on either side of the equator for two degrees. The edible Date is totally unknown in the countries through which we travelled; the people do not understand the propagation of them.—J. A. G.

2. Cucos nucifera, L. Cocoa-nut. Abundant at Zanzibar in 1860; but a hurricane visited the island in 187–, and destroyed the majority of them. A few grow on the east coast of the mainland; but none were met with in the interior.—J. A. G.

3. Borassus æthiopicus, Mart. This Palm extends more or less from Zanzibar island to the Egyptian territory, and when without a stem in its young state is called "meelalla" (Kin.); full-grown it is the "m'voomo" (Kis.), "mohama" (Kin.), and "deleb" (Egypt). One trunk measured, when cut down, 37½ feet greatest circumference, root end 9 feet 3 inches, and 7 feet 1 inch at four feet from the ground. When growing, the thickest portion of the trunk appears far up the tree. The edible part of the smooth blotched fruit is yellow, stringy, and of a fruity flavour. A sweet insipid juice is collected three times daily from incisions made under its leaves, and drunk by the natives at Mininga, 4° 18′ S. lat. The young shoots are made into flageolet-reeds by the Africans, and the old leaves into sieves, baskets, thatch, rope, and fuel; the leaves give a most brilliant white light, crackling as they burn. At 11° N. lat. the Shillooks made admirable matting and baskets with the leaves; and the Wanyamezi eat its roots, cooked, during famines. Its appearance is always a welcome sight to the traveller in Africa, as it always denotes water.—J. A. G.

4. Hyphæne thebaica, Mart. This branching Palm was observed between the east coast and the east-coast range, but seldom (Uganda) again till we reached 6° N. lat.

north of Gandokoro. It generally branches three times. Found in flower during April in Egypt, where it is called the "doom;" it was in fruit also during the same month. When growing singly the male tree is remarkably handsome, shaggy, with its stem and branches hidden by green and withered leaves, which droop almost to the ground, whereas the female tree is bare of leaves except at the extremities of the branches, where the pendent fruit, strung like onions to a rope, appear under the graceful hanging leaves. Donkeys eat the outer part of the fruit, which tastes like dry gingerbread. At the river Atbara, 17½° N. lat., we saw rope of a coarse description being made with its fronds. The trunk is used as beams and posts.—J. A. G.

5. Hyphæne, nov. sp. This unbranched Palm was only found at Wadi Soofur, 21½° N. lat., on the 9th May, 1863, when it was in ripe fruit. One of our men, Manua, had seen it at Mambweh, near Feepa, south of Lake Tanganyika, where there are numerous streams. He called it the "mizanza" Palm. A line of these trees was growing in the above locality, a valley of sand surrounded by rocky cliffs. The leaf curves down like those of *H. thebaica*, but is more collapsed. The inedible fruit is about the dimensions of a walnut, but differs in being a perfect ellipse, with a shining, thin, deep-purple skin, which is more fragile than that of the edible chestnut. This skin comes off readily; under it there is a stringy, dry, yellow, tasteless substance. Immense clusters of fruit grow between the green and the withered leaves. The male organ differs little from that of *H. thebaica*, and is longer. The tree does not attain the height of *Borassus æthiopicus.* The wood would answer for beams; and we saw our camel-men make shackles for their camels of its leaves, considering them softer for the feet, after wetting and twisting, than those of the other *Hyphænæ*. Seed deposited at Kew.—J. A. G.

Summary of the Species comprised in the foregoing Enumeration.

Natural Orders.	New species.	Known species.	Doubtful species.	Totals.
Ranunculaceæ	..	4	1	5
Anonaceæ	..	2	..	2
Menispermaceæ	..	1	..	1
Nymphæaceæ	..	2	..	2
Cruciferæ	..	2	1	3
Capparideæ	1	10	..	11
Violaceæ	..	1	..	1
Bixaceæ	2	..	1	3
Polygaleæ	..	2	..	2
Caryophylleæ	..	1	..	1
Portulaceæ	..	3	..	3
Tamariscineæ	..	1	..	1
Elatineæ	..	1	..	1
Dipterocarpeæ	..	1	..	1
Malvaceæ	..	21	..	21
Sterculiaceæ	1	4	..	5
Tiliaceæ	..	7	1	8
Zygophylleæ	..	2	..	2
Geraniaceæ	..	2	..	2
Rutaceæ	..	1	..	1
Simarubeæ	1	1	..	2
Ochnaceæ	..	1	2	3
Burseraceæ	..	1	1	2
Meliaceæ	..	2	1	3
Olacineæ	..	2	..	2
Celastrineæ	..	2	..	2
Rhamneæ	..	1	1	2
Ampelideæ	1	5	..	6
Sapindaceæ	..	1	..	1
Anacardiaceæ	..	5	..	5
Leguminosæ	10	83	8	101
Crassulaceæ	..	1	1	2
Hamamelideæ	..	1	..	1
Combretaceæ	..	9	..	9
Myrtaceæ	..	2	..	2
Melastomaceæ	1	3	..	4
Lythraceæ	..	3	..	3
Onagrarieæ	..	7	..	7
Cucurbitaceæ	1	11	..	12
Ficoideæ	..	3	..	3
Umbelliferæ	1	5	..	6
Loranthaceæ	1	2	1	4
Rubiaceæ	6	15	7	28
Compositæ	21	35	7	63
Sapotaceæ	..	2	2	4
Myrsineæ	1	..	..	1
Plumbagineæ	..	1	..	1
Oleineæ	1	..	..	1
Salvadoraceæ	..	1	..	1
Apocyneæ	..	4	2	6
Carried forward	49	277	37	363

Natural Orders.	New species.	Known species.	Doubtful species.	Totals.
Brought forward	49	277	37	363
Asclepiadeæ	8	8	1	17
Loganiaceæ	..	..	1	1
Gentianaceæ	..	1	..	1
Boragineæ	..	5	..	5
Convolvulaceæ	2	15	2	19
Solanaceæ	..	11	1	12
Scrophulariaceæ	6	7	..	13
Lentibulariaceæ	..	2	..	2
Bignoniaceæ	..	2	3	5
Acanthaceæ	8	18	1	27
Sesameæ	1	3	..	4
Selagineæ	..	1	..	1
Verbenaceæ	3	3	3	9
Labiatæ	9	12	3	24
Phytolaccaceæ	..	1	..	1
Chenopodiaceæ	..	2	..	2
Amarantaceæ	..	8	..	8
Polygonaceæ	..	6	..	6
Nyctagineæ	..	2	..	2
Proteaceæ	1	..	..	1
Thymelaceæ	..	1	..	1
Euphorbiaceæ	3	15	4	22
Urticaceæ	..	5	4	9
Ceratophylleæ	..	..	1	1
Salicaceæ	..	..	1	1
Hydrocharideæ	1	4	..	5
Scitamineæ	..	..	1	1
Musaceæ	..	2	..	2
Orchideæ	3	1	1	5
Iridaceæ	2	2	..	4
Amaryllidaceæ	..	1	..	1
Hypoxidaceæ	..	1	..	1
Velloziaceæ	1	..	..	1
Dioscoreaceæ	..	1	1	2
Alismaceæ	..	1	..	1
Potameæ	..	1	..	1
Aponogeteæ	1	1	..	2
Aroideæ	..	2	2	4
Lemnaceæ	..	1	..	1
Liliaceæ	4	4	..	8
Asparagaceæ	..	3	..	3
Smilaceæ	..	1	..	1
Pontederiaceæ	..	2	..	2
Commelynaceæ	..	8	..	8
Flagellariaceæ	..	1	..	1
Cyperaceæ	8	27	3	38
Gramineæ	3	35	7	45
Filices	..	8	..	8
Total	113	512	77	702

Among the above 113 new species there is one new genus, *Margaretta*, in Asclepiadeæ, here first described, and one, *Porphyrostemma*, in Compositæ, first described from our specimens.

The one hundred species collected on the way to Africa at Rio de Janeiro, Europe Island, Delagoa Bay, Johanna Island, and Zanzibar, are not included in the above Enumeration and Summary; neither are those plants which were noted or drawn but not collected upon the journey, nor the few contained in the Addenda.

Summary of Meteorological Observations made during the Expedition.

Table showing the Temperatures, Rain, and Wind.

Stages of the Expedition.	Highest temp. in shade.	Lowest temp. in shade.	Rain and wind.
First sixteen stages, in latitude 7½° S., altitude 0 to 391 feet above sea-level. From 2nd to 23rd Oct. 1860	3 P.M. 22nd Oct. 100°	....	None. S.S.W. wind.
17th to 37th stage, lat. 7½° to 6½° S.; altitude of east-coast range 5148 feet; temp. at summit 76°. From 24th Oct. to 21st Nov......	Noon, 12th Nov. 95°	11 A.M. 2nd Nov. 80°	Rain once or twice. South wind.
38th to 52nd stage, lat. 6½°. From 22nd Nov. to 21st Dec. 1860. Altitude 2500 to 3500 feet	1.45 P.M. 13th Dec. 92°.	4th Dec. 74°.	Rain, eight days. E. & E.N.E.
53rd to 98th stage, lat. 6½° S. to 3° S., altitude 3500 to 4000 feet. From 22nd Dec. 1860, to 20th Oct. 1861	1.30 P.M. 24th Dec. 90°.	28th March. Min. therm. 62°.	Rain, thirty-four days. Wind variable; from March to August, S.E.
99th to 108th stage, lat. 3° S., altitude 3400 to 4200 feet. From 21st Oct. to 21st Nov. 1861	25th Oct. 91°.	13th Nov. Min. therm. 55°.	Rain, seven days. N.E. wind generally.
109th to 117th stage, lat. 2° S., altitude 4660 feet. From 22nd Nov. 1861, to 20th April, 1862	5th Dec. 81°·5, max.	13th Dec. Min. therm. 54°.	60 days, rain, 13·3 inches. N.E. wind.
118th to 150th stage, lat. 2° S. to 2° N., altitude 4661 to 3500 feet. From 21st April to 25th July, 1862	May. 82°, max. therm.	Second week in June. 59°, extreme cold.	Rain, forty-three days, 8 inches. Wind variable, and S.E.
151st to 170th stage, lat. 2° N. From 26th July to 19th Nov. 1862. Altitude 3500 to 2800 feet.	Second week in Aug. 89°, max.	Second week in Aug. 60°, max.	Rain, sixty-eight days. Wind S.E. and variable.
171st to 192nd stage, lat. 2° N. to 5° N. From 20th Nov. to 16th Feb. 1863. Altitude 2800 to 1500 feet.	Feb. 7th. 100°.	23rd Nov. on the Nile, in afternoon. 75°.	A few thunder-showers in November. Dry season at Gondokoro.

ERRATA.

P. 151, line 2, *for* Sherri *read* Gherri.

P. 167, line 3 from bottom, dele the query after *Cyperus sphærocephalus*.

J. A. G.

W. H. Fitch del et lith

J. N. Fitch imp

Clematis chrysocarpa, *Welw.*

W.H. Fitch del. et lith.

Ranunculus pinnatus, *Poir.*

J.N. Fitch imp.

W.H. Fitch del. et lith.

Senebiera nilotica, D.C.

J.N. Fitch imp.

W. H. Fitch. del. et lith.

Cleome hirta, *Oliv.*

J. N. Fitch imp.

W.H. Fitch del. et lith.

Cleome monophylla, *L.*

J.N. Fitch imp.

W.H. Fitch. del. et lith.

Boscia salicifolia, *Oliv.*

J N. Fitch imp.

W.H. Fitch del. et lith.

J.N. Fitch imp.

Cochlospermum niloticum, *Oliv.*

W.H. Fitch del. et lith.

Polygala persicariaefolia, D.C. var

J.N. Fitch imp.

W. H. Fitch del. et lith.

J. N. Fitch imp.

Polygala acicularis, *Oliv.*

W. H. Fitch del. et lith.

Hibiscus hirsuta, *G. & P.*

J. N. Fitch imp.

W.H. Fitch del. et lith. J.N. Fitch imp.

Pavonia Schimperiana, *Hochst.*

W. H. Fitch del. et lith.

Hibiscus Grantii, *Mast.*

J. N. Fitch imp.

W. H. Fitch del. et lith.

Hibiscus articulatus, Hochst.

J. N. Fitch imp.

W.H. Fitch del. et lith.

J.N. Fitch imp.

Hibiscus gossypinus, *Thunb, var.*

W.H.Fitch.del.et lith. J.N.Fitch.imp.

Dombeya reticulata *Mast.*

W. H. Fitch. del. et lith.

J. N. Fitch imp.

Melhania ferruginea, *Rich.*

W. H. Fitch, del. et. lith.

J. N. Fitch, imp.

Grewia mollis, *Juss.*

W.H. Fitch del et lith

J.N Fitch imp

Harrisonia abyssinica. *Oliv.*

W.H. Fitch del. et lith.

Ochna macrocalyx, *Oliv.*

J.N. Fitch, imp.

W. H. Fitch del. et lith.

J. N. Fitch, imp.

Trichilia emetica *Vahl.*

W.H. Fitch del et lith.

J.N. Fitch, imp.

Elæodendron æthiopicum, *Oliv.*

W.H.Fitch del et lith.

J.N.Fitch imp

Vitis cornifolia, *Baker*.

W.H. Fitch del et lith.

J N Fitch imp

Vitis Grantii, *Baker.*

W.H.Fitch del et lith.

J.N.Fitch imp

Sorindeia madagascariensis. D.C.

W.H. Fitch del et lith.

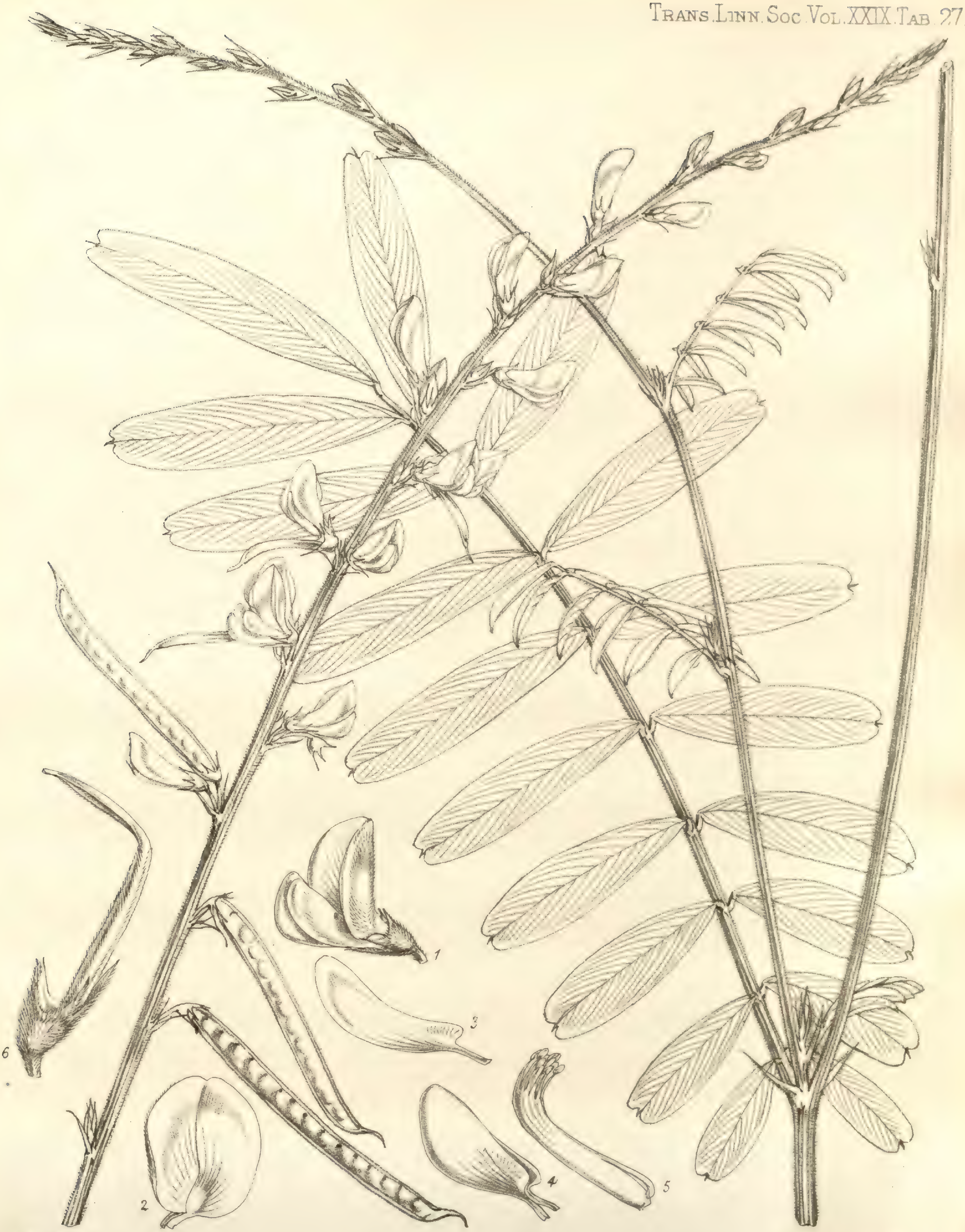
J.N. Fitch imp.

Odina fruticosa, *Hochst.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

A. Crotalaria nigricans *Baker.* B. C. Grantii, *Baker.*



W. H. Fitch, del. et lith.

J. N. Fitch imp.

Tephrosia reptans, *Baker*

W. H. Fitch del et lith.

J. N. Fitch imp.

Tephrosia rigida, Baker.

W.H. Fitch del. et lith

J.N. Fitch imp

Tephrosia æquilata. *Baker.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Tephrosia polysperma, *Baker.*

W.H. Fitch del. et lith.

J.N. Fitch imp.

Tephrosia Vogelii. *HK. f.*

W. H. Fitch. del. et lith.

J. N. Fitch imp.

Tephrosia eriosemoides. *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp

Smithia capitulifera, *Welw.*

W.H. Fitch del. et lith

J.N. Fitch imp

Eriosema flemingioides, *Baker.*

W.H. Fitch del. et lith.

Cassia Grantii, Oliv.

W.H. Fitch del. et lith. J.N. Fitch imp.

Cassia falcinella, *Oliv.*

W. H. Fitch. del. et lith. J. N. Fitch imp.

Albizzia brachycalyx. Oliv.

W.H. Fitch del et lith.

J.N. Fitch imp

Combretum capituliflorum, *Fenzl.*

W. H. Fitch. del et lith. J. N. Fitch imp.

Dissotis prostrata, *Hk. fil.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

A. Dissotis petiolata, *Hk. fil.*
B. Nesaea cordata, *Hiern.*

W. H. Fitch del. et lith.   J. N. Fitch imp.

Momordica trifoliolata, *Hk. f.*

W. H. Fitch. del. et lith.

J. N. Fitch imp.

Peucedanum fraxinifolium. *Hiern.*

W.H.Fitch del. et lith.

J.N. Fitch imp.

Peucedanum Grantii, *Kingston*.

W.H. Fitch del et lith

J.N. Fitch imp

Loranthus usuiensis. *Oliv.*

W. H. Fitch del. et lith. J. N. Fitch imp.

Viscum tuberculatum, *A. Rich.*

W. H. Fitch del et lith.

J. N. Fitch imp.

Pentas Quartiniana, *Hk. fil.*

W. H. Fitch. del. et. lith.

J. N. Fitch imp.

Otomeria madiensis, *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Oldenlandia effusa, *Oliv.*

W. H. Fitch del et lith.

J. N. Fitch imp.

Plectronia venosa, *Oliv.*

W.H. Fitch del. et lith.

J. N. Fitch imp.

Fadogia fuchsioides, *Welw.*

W.H. Fitch. del et lith.

J.N. Fitch imp

Ixora ternifolia, *Hk. f.*

W.H. Fitch. del. et lith.

J.N. Fitch imp.

Spermacoce dibrachiata, *Oliv.*

W. H. Fitch del. et lith.

Spermacoce Kotschyana, *Oliv.*

W.H. Fitch. del. et lith. J.N. Fitch imp

Spermacoce (Hypodematium) ampliata, *Hk. f.*

W H Fitch del et lith.

J. N Fitch imp

Gutenbergia cordifolia, *Benth.*

W. H. Fitch. del. et lith.

J. N. Fitch imp.

A. Venonia Perrottetii, *Sch. Bip.*
B. Venonia turbinata, *O. & H.*

W.H. Fitch del. et lith.

J.N. Fitch imp.

Vernonia Grantii. *Oliv.*

W.H. Fitch, del. et lith.

J.N. Fitch imp.

Erigeron Grantii, *Oliv. & Hiern.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Sphaeranthus polycephalus, O.&H.

W.H. Fitch del et lith.

J.N. Fitch imp

Bidens lineariloba, *Oliv.*

W. H. Fitch, del et lith.

J. N. Fitch imp.

Helichrysum Kirkii. *Oliv. & Hiern.*

W. H. Fitch del. et lith.

J. N. Fitch, imp.

Helichrysum undatum, *Less.*

W. H. Fitch del et lith.

J. N. Fitch imp.

Porphyrostemma Grantii. *Benth.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

A. Pulicaria Grantii, *Oliv. & Hiern.*
B. Anisopappus chinensis, *Hk. & Arn.*

W.H. Fitch del et lith.

J.N. Fitch imp

Coreopsis Grantii. *Oliv.*

W. H. Fitch del et lith.

J N Fitch imp

Berkheya Spekeana. *Oliv.*

W.H.Fitch del et lith.

J.N.Fitch imp

Echinops amplexicaulis, *Oliv.*

W.H. Fitch del. et lith.

J.N. Fitch imp.

Phyllactinia Grantii. *Benth.*

W. H. Fitch. del. et lith.

J. N. Fitch imp.

Erythrocephalum nutans, *Benth.*

W.H. Fitch. del. et lith.

J.N. Fitch imp.

Dicoma Karaguensis. *Oliv.*

W.H. Fitch. del. et. lith.

J.N. Fitch imp.

Embelia nilotica, *Oliv.*

W. H. Fitch del et lith.

J. N. Fitch imp.

Tacazzea apiculata, *Oliv.*

Bassia Parkii, *G. Don.*

W. H. Fitch, del. et lith. J. N. Fitch imp.

W H Fitch. del. et lith.

J.N. Fitch imp

Schizoglossum Grantii, *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Gomphocarpus longipes, *Oliv.*

W.H.Fitch. del et lith.

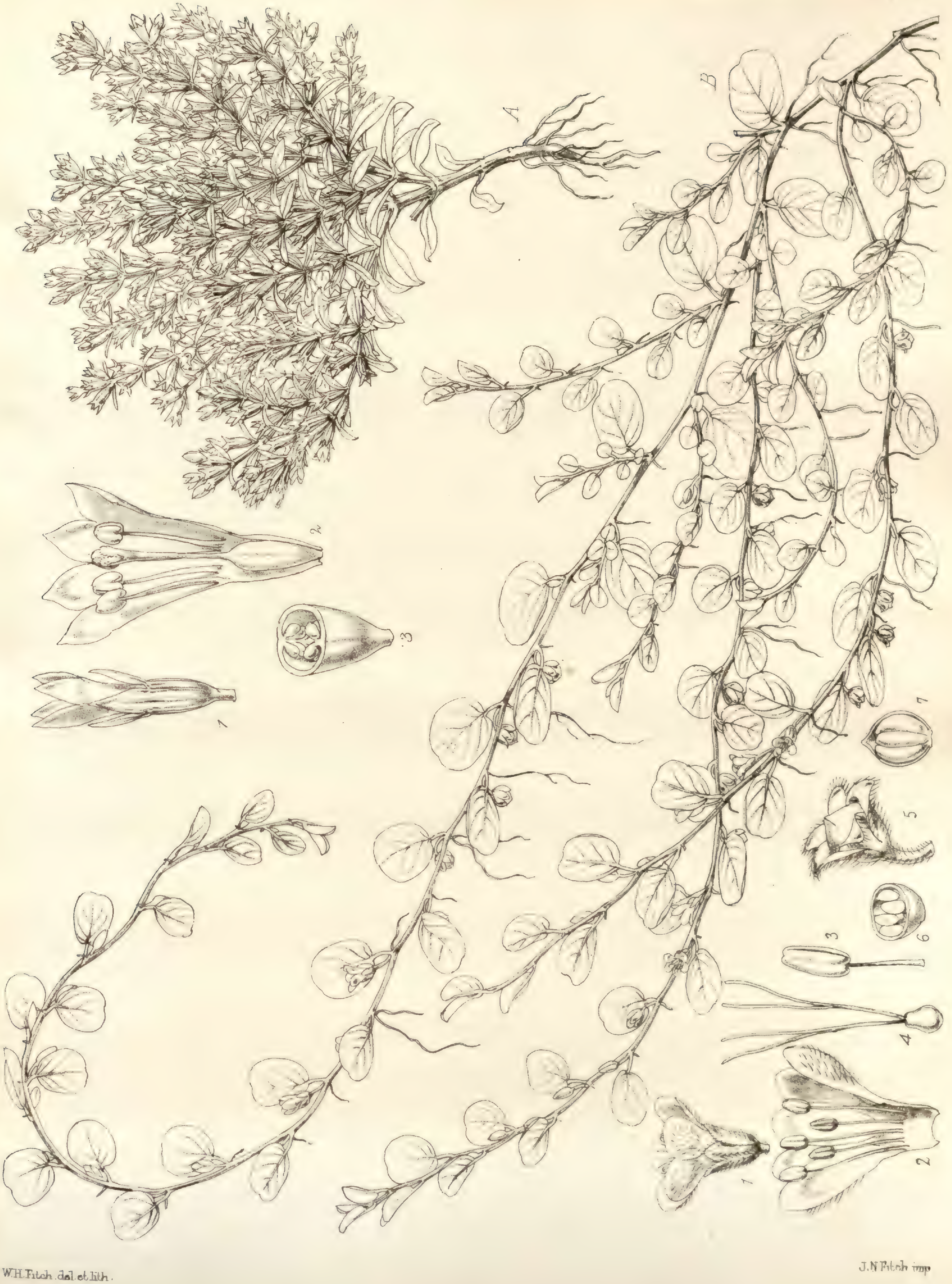
J N Fitch imp

Margaretta rosea, *Oliv.*

Brachystelma plocamoides, *Oliv.*

W H Fitch del et lith

J. N. Fitch imp



A. Octopleura loeselioides, *Benth.*
B. Evolvulus dichondroides, *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Ipomæa pinnata, *Hochst.*

W.H.Fitch del. et lith.

J.N.Fitch imp.

W.H. Fitch del. et lith.

J.N. Fitch imp.

Ipomaea Grantii, *Oliv.*

W.H. Fitch del et lith.

J.N. Fitch imp.

Plectranthus stachyoides, *Oliv.*

W. H. Fitch del et lith.

J. N. Fitch imp

Aeolanthus heliotropioides, *Oliv.*

W.H.Fitch del. et lith.

J.N.Fitch imp.

Leucas calostachys. *Oliv.*

W. H. Fitch. del. et lith.

J. N. Fitch imp

Sesamum macranthum. *Oliv.*

W. H. Fitch del et lith.

J. N. Fitch imp.

Crossandra nilotica, *Oliv.*

W. H. Fitch del et lith. J. N. Fitch imp

Acanthus arboreus, *Forsk.*

W. H. Fitch del et lith.

J. N. Fitch imp.

A. Rhamphicarpa recurva, *Oliv.*
B. Sopubia karaguensis, *Oliv.*

W. H. Fitch del et lith.

J. N. Fitch imp

Cycnium adonense. E. Mey.

W. H. Fitch. del et lith.

J. N. Fitch imp.

Clerodendron rotundifolium. *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Rumex maderensis, *Lowe.*

W.H. Fitch. del. et lith.

J.N. Fitch imp

Gnidia involucrata, *Steud*

W. H. Fitch del et lith.

J. N. Fitch imp

Protea madiensis, *Oliv.*

W. H. Fitch. del. et lith.

J. N. Fitch imp

Euphorbia Grantii, *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Hymenocardia Heudelotii, *Muell. Arg.*

W.H. Fitch del. et lith.

J.N. Fitch imp.

Croton niloticus. *Muell. Arg.*

W. H. Fitch. del. et lith.

J. N. Fitch imp

Acalypha Vahliana *Muell. Arg.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Acalypha bipartita, *Muell. Arg.*

W. H. Fitch. del. et lith.

J. N. Fitch. imp.

Acalypha villicaulis, *Hochst.*

W. H. Fitch. del et lith.

J. N. Fitch imp.

Ficus Sycomorus, *L.*

W.H.Fitch. del. et. lith.

J.N.Fitch imp.

Gladiolus corneus, *Oliv.*

W. H. Fitch, del. et lith. J. N. Fitch imp.

A. Montbretia laxifolia, *Klatt*. B. Kniphofia Grantii, *Baker*.

W.H. Fitch. del. et lith.

Sagittaria obtusifolia, *L.*

J.N. Fitch, imp.

W. H. Fitch del et lith.

J. N. Fitch imp.

A. Caesia africana, *Baker*.
B. Anthericum Grantii, *Baker*.

W H Fitch del et lith.

J. N. Fitch imp

Chlorophytum affine, *Baker.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

Asparagus Pauli-Guilelmi, *Solms*

W.H. Fitch. del. et lith.

J.N. Fitch imp.

Smilax Kraussiana, *Meissn.*

W.H. Fitch, del et lith.

J.N. Fitch, imp.

Isolepis echinocephala, *Oliv.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

A. Cyperus sphaerocephalus, *V.*
B. Fuirena leptostachya, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

A. Abildgaardia monostachya, *V.*
B. Abildgaardia pilosa, *Nees.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

A. Ascolepis protea, *Welw. Var.*
B. Scleria glomerulata, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Scleria racemosa, *Poir. var.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

A. Panicum brizanthum, *Hochst. var.*
B. Pennisetum Benthami, *Steud.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

Eragrostis patens, *Oliv.*

Aristida gracillima, Oliv.

W. H. Fitch del et lith.

J. N. Fitch, imp.

A. Eragrostis congesta, *Oliv.*
B. Tristachya leucothrix, *Trin.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Vossia procera, *Wall. et Griff.*

W.H.Fitch, del. et. lith.

J.N.Fitch, imp.

Linociera nilotica, Oliv.

W. H. Fitch del. et lith.

J. N. Fitch imp.

A. Toxocarpus africanus, *Oliv.*
B. Schizoglossum Petherickianum, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

Gomphocarpus stenophyllus, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Gomphocarpus glaberimus, *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch, imp.

A. Dopatrium macranthum, *Oliv.*
B. Vandellia lobelioides, *Oliv.*

W. H. Fitch del. et lith.

J. N. Fitch imp.

A. Bonnaya pusilla, *Oliv.* B. B. trichotoma, *Oliv.*
C. Buchnera usuiensis, *Oliv.*

W. H. Fitch, del et lith.

J. N. Fitch imp.

Thunbergia oblongifolia, *Oliv.*

W. H. Fitch, del. et lith.

Brillantaisia alata, *T. Anders.*

W.H. Fitch, del. et lith.

J.N. Fitch imp.

Brillantaisia pubescens, *T. Anders.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Calophanes trichocalyx, *Oliv.*

Barleria Grantii, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

Barleria marginata, *Oliv.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

A. Justicia uncinulata, *Oliv.* B. J. subsessilis, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

Vitex simplicifolia, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Vitex madiensis, *Oliv.*

W. H. Fitch, del et lith.

J. N. Fitch, imp.

Acrocephalus cylindraceus, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Acrocephalus caeruleus, *Oliv.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Acrocephalus lilacinus, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Plectranthus ovatifolius, *Oliv.*

W. H. Fitch, del. et lith. A. J. N. Fitch, imp.

B.

A. Æolanthus repens, *Oliv.*
B. Æ. ambustus, *Oliv.*